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Preceptor Method in Teaching\*

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While it is generally conceded that all medical education is alike, nevertheless, there has never been established a royal road for either the teacher or the pupil in getting at the basic or clinical sciences of his day. For the most part it has been a compromise effort on the part of those looking forward and those holding fast to that which seems good, in either case with the idea of doing a better educational job with their facilities and support. As Dr. Wilbur so aptly said, "The whole essence of clinical teaching is to bring together the teacher, the patient, the nurse, and the student in an environment most favorable for all of them." It is wholesome to have among our ranks a number of schools which are critical of existing methods, and which, with the courage of their convictions, are attempting courageous experiments in the teaching of medicine. Some of these methods are too young to be evaluated and we await with eagerness the part they are destined to play in the future. Be that as it may, the time is always ripe for analysis of existing methods, and to this end I wish to call to your attention the time honored preceptor method of teaching, particularly the student preceptor system.

While the preceptor method is not indigenous to this country, nevertheless, since Colonial days, the height of its glory, there has not been a generation in which this method has not been used in some form in one or more of our medical schools. In some institutions, students are assigned to outstanding internists or surgeons in their community; in other institutions the assignments are made to clinics, or to some form of group practice. It has been customary through all generations to evaluate the efficiency of this method by scanning the written reports of the students who were exposed to this system of training. Using this procedure as a yardstick of measurement, one wonders whether the student's judgment should be the sole criterion, for we glean from the reports nothing but praise and adulation on the one hand, and utter discontent on the other.

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Even in the latter half of the nineteenth century, Charles Caldwell, a conceited soul, prominent in the ranks of medical educators of the Ohio Valley, wrote very disparagingly of his apprenticeship. To quote: "I removed to the town, Salisbury, and placed myself under the tuition of a gentleman of reputation and standing, who had not long previously graduated in medicine, in the University of Pennsylvania. But, in relation to the advantages for improvement which I anticipated, I encountered a sad and mortifying disappointment—I would not have continued with him for three months. But for an unwillingness to mortify him, or in any way disoblige him, I protracted my stay for about a year and one-half—an instance of self-neglect which I afterwards sincerely regretted because it involved the most unqualified and indefensible waste of time I ever committed." Caldwell wrote this criticism a number of years following his apprenticeship. We are sure that a man of Caldwell's temperament would not have remained with his preceptor had he not been reasonably satisfied at the time.

In our time, when the school is using the preceptor system as a part of its curriculum, with the preceptors carefully selected, the students are usually very appreciative of the service. In their writing the apprentices seem to be immensely impressed with the bedside manner of their preceptors, or the little petty jealousies that are confided to them after a few weeks of intimate association. It would be well to get the opinions of a number of physicians who were exposed to this method some ten years after graduation. Through this method of evaluation we would more nearly eliminate the enthusiasms of friendship that may exist between the preceptor and apprentice, and the sense of self-importance occasioned by the responsibility given the apprentice of making rounds alone with nurses, or supervising technicians and the like. Because students in every class vary widely in their intellectual ability and attainment, no inflexible scheme can be used successfully to train them. The student in the upper third of the class is apt to learn from any exposure, even to the progressive "hands-off" method of teaching. It is the student in the lower third of his class that we look upon as the problem child. Whereas, from this group some of our most practical, sympathetic and earnest physicians come, they are a problem, not that they are unwilling to work, but rather that they do not know how to work. They are not stubborn, they are by and large the type of individuals who are placid and amenable to any suggestion. It is for this group that one has to concoct new methods, using the keenest instructors to whip them into shape for their life's work.

Some might disagree by saying the upper third student is the "problem child." My answer to this is that many of them would like to be classified as such in order to get out of work. Any workable scheme must be adapted to these various types of students and to the faculty personnel as well. The teachers who display imagination and vigor in their work, supported by intellectual and scientific talents, are the heart and soul of any successful program. We have

learned that supervision and guidance by inspiring teachers are more important in the training of students than the mere assignment of them to a ward or dispensary.

After considerable experiment, we have arrived at a plan in which the student unit system meets our requirements as no other system has done. The student unit is composed of two juniors and one senior, and such units are assigned to the ward and dispensary in rotation. Every patient admitted to the house or dispensary is assigned to a junior student who works up the case with his senior. These teams are assigned to the various staff men for supervision. In the dispensary, the supervisors are all members of the clinical staff, whereas on the ward the supervisors include instructors from the basic departments as well as from the clinical staff. This arrangement permits the men from the basic departments ample time to study their cases in respect to the applied sciences. As the groups are small, close personal supervision and direction are possible. This is a good system basically, as it offers unlimited scope to one's initiative. The chief advantages as we see them are:

1.—The junior student gets the benefit of almost constant instruction from either the senior student or the house or visiting staff, thereby making him a very valuable man in senior year.

2.—The senior student is enabled to observe and study in detail more cases than if he were assigned cases outright to be worked up. And he is stimulated to do his best because he has the responsibility of teaching his fellow student.

3.—The house and visiting staff, particularly in the dispensary, are likewise stimulated by the arrangement, as they are not likely to be handicapped by incomplete records, haphazard duties, and so on. They are really instructors and are not loaded down with the details which often fall on them in a crowded dispensary.

4.—The astute instructor can keep his teams alert by playing, so to speak, the junior against the senior student, by quizzing and by assigning outside work and the like.

5.—The assignment of the house staff, the basic science instructors, and the visiting staff to such teams serves not only as a worthy method of training teachers for the future, but it lightens the load of the house staff, which is a considerable one with this method of teaching.

6.—The diagnostic ability of the house staff is constantly at stake for the reason that the student team and the preceptor are assigned to cases on all the wards; and inasmuch as the preceptor goes into greater detail in the patient's history with the team than does the staff officer in making his daily ward rounds with the intern, the latter is often made to blush.

7.—The use of the instructors from the basic departments serves not only as a liaison in correlating the basic with the clinical sciences, but also in establishing esprit de corps between the several departments of the school.

This scheme, which utilizes equally the head of the department, his staff of assistants, teachers of the basic departments, and the resident staff, all of whom are assigned a student team, does not replace the seminars, ward walks, and other conferences as are commonly used in teaching. In reality it simply exaggerates the patient as well as the disease in the teaching of medicine. It is medicine taught in the raw. There are no frenzies, no resident staff or assistants trailing along with the professor in all his glory. Everything is informal, man to man as it were. It is the survival of the fittest, be it teacher, senior or junior student.

Finally, I wish to reiterate that there is no royal road for the teacher or the pupil in getting at the basic or clinical science of present day teaching of medicine. I wish to offer every encouragement to medical schools which are not satisfied with existing methods, and which are attempting courageous experiments in the teaching of medicine. We feel confident of the success of these undertakings, for they are using the patient as the spearhead of an environment so essential in the teaching of medicine, be it in anatomy, physiology or chemistry, to say nothing of bacteriology, pathology and the clinical branches. Let us not forget the fact that in the teaching of medicine there is a student-patient relation which must not be overlooked, for without this, the training is half baked.

We are proud of the liberal stand the Association has taken in the past in medical education, and we are fortunate in having a JOURNAL which will publish all worth-while material relating thereto. Let more of us do what we would have others do, namely, research in teaching.



## Medical Student Migration

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The best feature of German medical education, and, perhaps, the only desirable one,<sup>1</sup> is that some students seek the best teachers in the various fields and transfer to their schools for one or more semesters. From the opening of Duke University School of Medicine in 1930, our students have been encouraged to spend one term at another medical school in this country or England, usually in their senior year. As shown in Table 1, sixty-eight (9 per cent) of the seven hundred graduates and seventy-one present seniors have availed themselves of this opportunity, and we are greatly indebted to the deans and faculties of the

TABLE 1.—MEDICAL SCHOOLS TO WHICH DUKE STUDENTS HAVE TRANSFERRED FOR A TERM (1930-1945).

School of Transfer	Number of Students
St. Bartholomew's .....	24 <sup>1</sup>
Yale .....	8 <sup>2</sup>
Chicago Clinics .....	7
California .....	7
Johns Hopkins .....	5
Cornell .....	5
Michigan .....	4
Cambridge .....	4 <sup>3</sup>
Washington .....	2
Harvard .....	2 <sup>3</sup>
Pennsylvania .....	1
Virginia .....	1
	68

schools who have made this migration possible. Not only did the students profit from these transfers, but they also brought back new ideas which helped the rest of us. In addition, this program has reduced the isolation of medical schools, and has made students and faculty realize that good medicine is taught and practiced at institutions other than their own school.

The students who wish to transfer select the school and the term desired, obtain the permission of the head of the Duke department in charge of the term during which they will be absent, and have their programs approved by the curriculum committee. A request for permission to be admitted is then sent to the dean of the school which the student has chosen. All the deans have co-operated splendidly. For migration to schools in this country, the student pays his tuition to Duke for the term he is to be away, and the treasurer transmits the tuition to the school of transfer. If the fees at the latter are greater than those at Duke, the student pays the difference. If the student decides to study in England (except during the war), the Duke tuition is cancelled, and the student pays nominal fees to the British school. This saving in tuition partly covers his steamer passage. On his return, the student submits records that he has completed work comparable to that which he would have taken at Duke.

<sup>1</sup> These students also attended clinics at the National Hospital for Nervous Diseases, Queen's Square, London, and the Great Ormond Street Hospital for Sick Children, London; seven of them also studied obstetrics at the Rotunda Hospital, Dublin.

<sup>2</sup> One of these students also spent an additional term at the University of California School of Medicine.

<sup>3</sup> These students also attended clinics at the National Hospital for Nervous Diseases, Queen's Square, London, and one studied obstetrics at the Rotunda Hospital, Dublin.

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## A Recommended Teaching Concept and Organization for Professional Schools Based Upon Military Medical Training Experiences

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The universally favorable response to the so-called "G. I. Method of Teaching" warrants more than casual study of its essential features. If, under critical analysis, any features are found that appear to possess sufficient inherent values to suggest their adoption by medical educators, these should be brought to their attention. Motivated primarily by experiences gained in three and one-half years devoted entirely to military medical training and secondarily by the encouragement and comments offered in discussions pertaining to professional education by hundreds of professional men with whom we have been afforded contact during this period, we feel justified in calling attention to various features of the "G. I. Pattern of Instruction" employed by us in our training program.

In a previous article,<sup>1</sup> the scrutiny of medical educators was invited to certain features of this pattern of instruction which had proven most effective in accomplishing a wartime medical training mission. Among others, emphasis was placed on the importance of and necessity for making all teaching personnel "training conscious."

Since much of the success attributed to the "G. I. Method of Teaching" has been dependent on the degree of "training consciousness" developed within a teaching staff, it is the purpose of this paper to (1) discuss this feature in some detail, and (2) suggest a method whereby medical educators might develop it to a greater degree within their own teaching organizations.

### WHAT IS TEACHING CONSCIOUSNESS?

Teaching consciousness may be said to consist of an insight into the process of learning, with a thorough knowledge of correct teaching technique and an awareness of how the correct technique of teaching assists others to acquire new knowledge. Any technique or pattern of instruction, if designed correctly and then carried out, will invariably result in a satisfactory acquisition, understanding and retention of knowledge by students. An instructor can only be said to be teaching conscious when he is fully aware of what a correct teaching pattern or process consists of and then carries it out in his teaching. Presented briefly, this instructional process will ordinarily consist of the following phases, discussed in proper sequence.

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1. **PREPARATION BY THE INSTRUCTOR.**—Careful planning is always the first step in efficient teaching. This includes not only the careful organization and preparation of the subject material to be presented to students, but, also, the equally careful planning, development, and coordination of all details incident to the actual presentation itself. To illustrate: In analyzing his teaching objective and preparing his lesson plan, an instructor decides to include certain graphic charts and a short film to help clarify his material presentation. It is not enough for him to merely decide to use these teaching tools—he must either secure and employ them himself, or contact those designated to do this work for him, making certain that they fully understand their responsibility as it pertains to the successful accomplishment of his teaching objective. In many cases a student's failure to learn can be traced to the instructor's inadequate planning and preparation.

2. **ACTUAL PRESENTATION OF NEW MATERIAL.**—In this phase of instruction an instructor must be familiar with the various means by which new material can be presented and which method or combination of methods will, most effectively, make certain that his material is well received and thoroughly understood. His awareness of the relative importance and relationship of arousing interest, utilizing the multiple sensory bombardment appeal method<sup>2</sup> for presenting his material, the value of relating this material as presented to its practical application, and the importance of final summary or repetition of essential points in order to emphasize that which must be learned, is as necessary as is the knowledge of how he should look, speak, and gesticulate. A teacher has only one commodity to develop and sell, namely, knowledge; it is imperative he be a master craftsman if he is to sell much of his commodity. Military training agencies, utilizing and emphasizing the combined lecture-demonstration method employing multiple sensory bombardments,<sup>3</sup> elevated the art and science of presenting new material to its highest plane.

3. **APPLICATION OF THE NEWLY ACQUIRED INFORMATION.**—The surest and best way to learn something is to do it. This principle has no refutation. It is often difficult and tedious to develop a practical application when teaching certain subjects, but the worth of the superior teacher soon becomes evident when his energy and ingenuity devise or improvise a practical applicatory procedure for a difficult subject. Anyone can be taught the principles of lecturing, but it requires a deep sense of teaching responsibility before men are motivated to include the principle of "learn by doing" in their teaching patterns. Military training agencies placed a high premium upon and emphasized proper presentation and application in their training patterns for successful accomplishment of training objectives.

4. **MEASUREMENT OF THE STUDENT'S MASTERY OF THE MATERIAL TAUGHT.**—Any instructor must know what he wants his students to learn, and how to find out whether they have actually learned it from his teaching. An instructor has many devices and techniques that he can use to check his work. An instructor who is "teaching conscious" knows these and also knows how to use them. Why to test, what to test, when to test, and how to test are fundamentals that all teachers must understand. Granted that performance tests are always

the best and most accurate ways to measure knowledge, still, many good objective examinations can be designed. The time-honored true and false examinations together with the frequently used essay type tests are, except in certain situations, as outmoded as are World War I's airplanes. Good indices of "teaching consciousness" are the yardsticks designed by a teacher to measure what he believes he has taught.

5. FINAL DISCUSSION AND/OR CRITIQUE.—The retention of new knowledge is never complete until its essential points have been discussed with or, better still, taught to another. Only in this manner does final clarity and complete understanding become fixed in the mind of the student. If a little knowledge is a dangerous thing, certainly wrong knowledge is much more dangerous. Review and repetition tend to clarify knowledge and develop proficiency; consequently, a good teacher will invariably employ final discussions and critiques to drive home whatever he wants to be retained.

Awareness of these five essential phases in the teaching process will definitely stamp a teacher as being "teaching conscious." It is emphasized that no one phase in this process is any more important than another, since the successful completion of one is predicated upon the successful accomplishment of its preceding phase. However, one phase of this teaching process, namely, that dealing with the presentation of material, merits discussion in more detail. One aspect only of this phase, that concerned with the employment of teaching aids, is to be discussed at this time. Since "teaching aids consciousness" is merely one part of the overall state of "teaching conscious," the former state cannot be developed as an entity separate from the latter. However, the increasing importance attached to "teaching aid consciousness" by progressive educators,<sup>3,4</sup> together with the experience of the authors, justify emphasis on this subject. Its relationship and importance to civilian medical instruction can hardly be over emphasized.

#### TEACHING AID CONSCIOUSNESS

As pointed out by McKown and Roberts,<sup>3</sup> educators have, in recent years, "originated, developed, introduced, and promoted many new and re-adapted types of organization, materials, devices, methods, and procedures." This positive action has been in response to the demands of modern society. Typical of these newer or progressive educational movements is the so-called "audiovisual" instruction. The tools that assist in "audiovisual" instruction are therefore called "audiovisual" aids. The phrase "audiovisual aids" is somewhat misleading if used as a synonym for the more inclusive phrase, "teaching aids" because the former implies that only two pathways of perception are involved in their use. As pointed out by Dent<sup>4</sup> and emphasized by the authors,<sup>1</sup> the term, teaching aids, is applicable to all materials used when multiple sensory stimulations are desirable, and will thus include auditory, visual, olfactory, gustatory and tactile stimulators.

Probably no field of education has utilized teaching aids more than has medical education, especially during its clinical and postgraduate years. And, probably, no one field of education lends itself better to the employment of teaching

aids than does medicine. Finally, probably no one field of education offers a brighter future for the development of and greater use of teaching aids than does the field of medical education.

Scientific concepts, even when reduced to their simplest terms, are often difficult to comprehend. Accurate medical knowledge stems from sound scientific truths. Unproven theories and concepts should be based upon that which is accurately known about a given subject. It therefore becomes imperative for physicians to thoroughly understand and be familiar with our factual knowledge, because our future advances and accomplishments in medicine will depend in no small degree upon how well we understand and utilize our basic truths.

Preclinical medical years offer innumerable opportunities in which teaching aids may be used with great advantage to facilitate comprehension and understanding by simplifying and clarifying factual material. Among other subjects, anatomy, physiology, bacteriology, pharmacological chemistry and pathology permit almost endless development of teaching aids or tools to assist teachers in presenting our basic medical truths so that these will be readily understandable.

Clinical and postgraduate years likewise offer limitless opportunities for the development and use of teaching aids. The large pharmaceutical firms of the country have long been aware of the advertising and teaching value of visual aids and have employed them extensively in their various periodicals and brochures. Further indications of definite progress in the development of this field are the listings of various professional teaching films and other aids.<sup>5</sup>

It is hoped that medical educators will seize upon and develop this "teaching aid field" since it would appear to offer much that can improve professional education. Here again, the extent to which these aids are used and the degree of success in their employment will depend almost entirely upon the amount and quality of training in the principles of their use that the teacher has received. As stated by Dent,<sup>4</sup> "The greatest factor retarding the more extensive and more intelligent use of visual-sensory aids is the inadequate training of teachers to make use of the materials available." In the foreword to its guidebook<sup>6</sup> for Army instructors, Secretary of War Patterson made the following profound statement: "The ideal officer is not afraid of anything—not even of a new idea." A corollary, equally profound in its civilian implication, might be "An ideal instructor is not afraid of anything—not even of a new teaching idea."

#### WHY TEACHING CONSCIOUSNESS MUST BE DEVELOPED IN MEDICAL TEACHERS

Since awareness of his responsibilities as a teacher is a basic prerequisite before any man may rightfully be called an instructor, it follows that unless an instructor is fully teaching conscious, he cannot be aware of his teaching responsibilities. As previously pointed out,<sup>1</sup> the fact that a man may be skilled in his particular field does not necessarily indicate that he is a capable teacher. It did not require military experience to emphasize this fact. Many potentially superior teachers are actually mediocre because they are not cognizant of what constitutes good teaching. A teacher is not born; he is developed. And after he has been developed he must be continuously assisted, because the process of good instruc-



tion is too complex to be entirely dependent upon the abilities and efforts of the teacher alone.

It is easy to understand why a scientific or professional education does not, of itself, qualify a man to be a good teacher. Nowhere within the curriculum are there included subjects designed to acquaint the student with the principles of pedagogy. Few teachers in professional schools hold degrees or certificates in education, yet their responsibility as teachers is far greater in comparison to that of the primary or secondary grade teacher who must be well qualified in order to hold a position. The medical teacher is dealing with the human equation, consequently he should possess the finest attributes of the skilled teacher. It is not enough to assume that because a man is called a teacher he will accept his responsibility and prepare himself to meet it. He deserves and should get help and assistance in this preparation, especially if he has had no previous training for a teaching responsibility.

It would, therefore, appear necessary and advisable to train and prepare most professional men in the art and science of instruction, whenever these men are assigned teaching duties.

A NEW ORGANIZATION AND FUNCTIONAL CONCEPT THAT WOULD APPEAR  
WORTHY OF INCLUSION WITHIN A MEDICAL TEACHING STRUCTURE

Granted that the development of a high degree of "teaching consciousness" is an imperative prerequisite to the development of an efficient teaching organization, the question follows: "How can this teaching consciousness be developed within a faculty?"

Since the scope of developing teaching consciousness is vast, encompassing awareness of the various phases in the entire process of instruction, it may be assumed that a teaching activity can best accomplish this objective if it has within its structure some organizational unit trained for and charged with the responsibility of developing it.

If attention may be invited once again to the organization of a military teaching structure, it will be observed that there is always a Director of Training in addition to the School Commandant, the latter corresponding to the Dean of a civilian school. About this Director of Training is developed the Training Department, charged with accomplishing all phases of the military training mission. Previous reference,<sup>1</sup> has been made to the development and effective utilization of a "Training Operations Department" in furthering the activities of the training staff of one Army Air Forces Medical Training Center. Headed by the Director of Training, this unit was charged with the responsibility of making all instructors training conscious; procuring, developing, storing, maintaining, and distributing all training aids; operating all visual projection and sound equipment used in teaching; preparing all mimeographed teaching material; and operating a library of teaching aids and miscellaneous teaching reference material. This unit further coordinated all inter-departmental and inter-sectional training activities, thus economically and efficiently precluding confusion, lack of coordination, duplicity of certain administrative procedures, and the undesirable

lack of uniformity that results from too much decentralization. In short, this unit served as the switchboard making possible orderly accomplishment of complicated training activities.

Is a unit similar to this feasible in a civilian medical school? It would appear not only feasible, in the opinion of the authors, but decidedly desirable. Dent<sup>4</sup> and McKown and Roberts,<sup>5</sup> emphasize the desirability and necessity for delegating the responsibility of accomplishing a teaching aids program to some unit or group designated for this assignment. While no definite organizational pattern can be established that would serve all activities and situations, still, it is possible to suggest a few basic positions. Obviously, a detailed organization will, of necessity, emerge as the requirements of each individual teaching activity dictate.

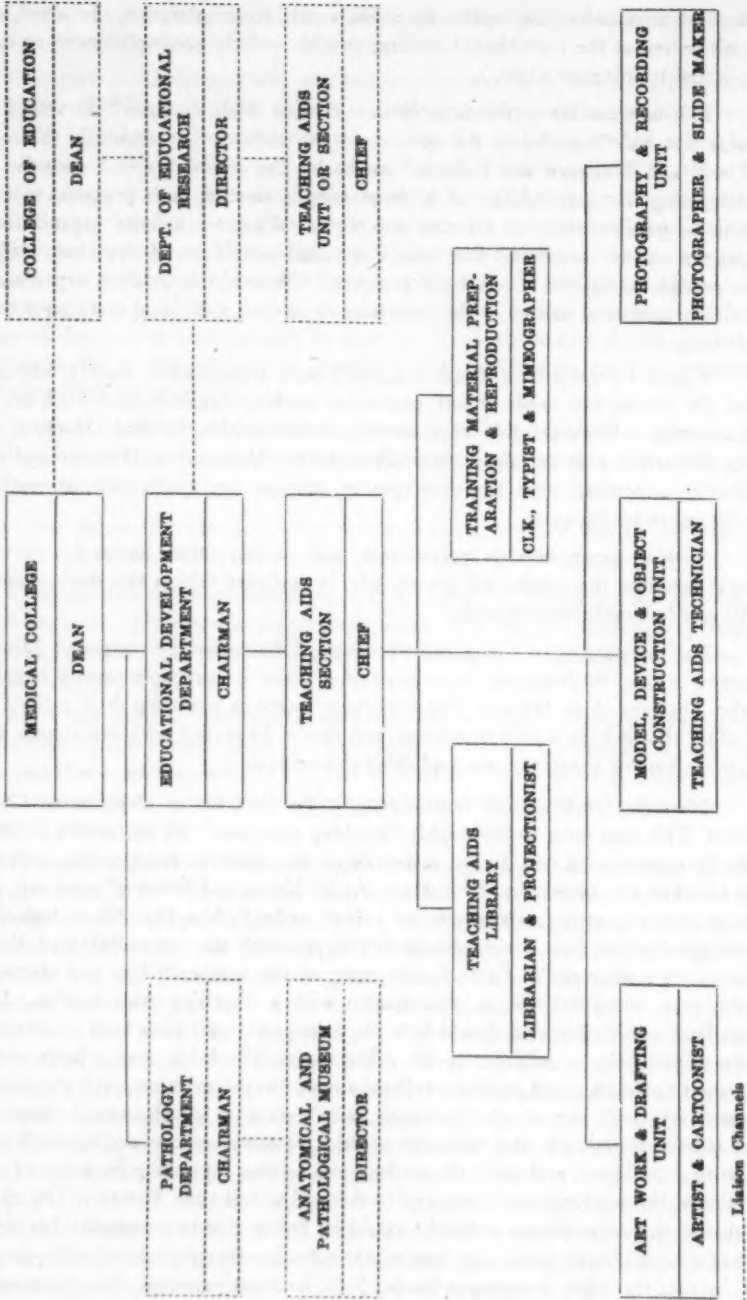
Figure 1 represents a simple suggested basic organization, readily adaptable to the desires and needs of any particular teaching organization. Such an organization will conceivably have several sections within its final structure, but in this article only certain responsibilities of the Department Director and that Section concerned with the development, storage, and utilization of teaching aids are to be discussed.

A third paper, now in preparation, will discuss other sectional structures and functions that might, advantageously, be included within this department as its scope of usefulness expands.

For the purpose of this paper, the name, Educational Development Department, is used to designate the organization while its principle section is called the Teaching Aids Section. The important factor is not what it is called, but rather that it have a definite mission and that it be staffed with individuals who are thoroughly capable of accomplishing this mission.

Most important in this organization is the Director or Department Chairman. This man must be thoroughly "teaching conscious," for the results obtained by his organization will depend primarily on the initiative, imagination, industry, leadership, and personality he displays. As McKown and Roberts<sup>5</sup> point out, this man "must possess qualifications of a high order." Also that "it is logical to assume that not just anyone should be charged with the responsibility of directing such a program." Table 1 lists some of the responsibilities and duties of this man, based only on an organization with a Teaching Aids Section. In a medical school, this man should be a physician, on a part-time basis or directing the department in addition to his other duties. Probably few schools would want to or even could justify a full-time man for this position until the department was well out of the "growing pains" stage of development. However, it is quite conceivable that with the addition of other sections dealing with educational problems, and with the teaching aid section expanding its scope of usefulness, the position would eventually demand a full time director. The chairman of this organization probably would be better able to accomplish his objective if he is directly under the dean of the school, rather than being subordinated to one of the other department heads. Still, he must maintain close relationship

FIGURE 1.—FUNCTIONAL ORGANIZATION FOR AN EDUCATIONAL DEVELOPMENT DEPARTMENT.



between his own Teaching Aids Section Staff and that of the Anatomical and Pathological Museum. The products of each are teaching aids and will frequently, no doubt, be combined as interest in the field mounts. Likewise, if the college is part of a University System with a Department of Educational Research as part of its College of Education, the Director of the new Educational Development Department, together with his Teaching Aids Section Chief, must have close liaison with the Director of Educational Research and the latter's

TABLE 1.—RESPONSIBILITIES; CHAIRMAN; EDUCATIONAL DEVELOPMENT DEPARTMENT.

1. Organization and Supervision of a Program designed to make all Faculty Members Teaching Conscious, this to include:
  - (a) Indoctrination of all faculty members in the various phases of instruction.
  - (b) Counseling, guiding, and assisting faculty members in their teaching duties as requested.
  - (c) Selection and appointment of an active Teaching Aids Committee.
  - (d) Procuring handbooks and preparing indoctrination materials for faculty members.
  - (e) Evaluation of teaching techniques, offering recommendations where indicated.
2. Organization, Direction, and Supervision of a Teaching Aids Section, this to include:
  - (a) Selection, indoctrination, and training of the Staff.
  - (b) Preparation of Budget Estimates.
  - (c) Procurement of commercial and other professional teaching aids, equipment, and teaching material as authorized.
  - (d) Supervision of the preparation of various locally produced materials.
  - (e) Physical establishment of Section.
  - (f) Devising of administrative forms for use in distribution of aids and equipment.
  - (g) Preparation of reference lists of available teaching aids.
  - (h) Evaluation of the Teaching Aid Program.
3. Maintain Liaison and Coordinate Activities of the Department with:
  - (a) Director of the Anatomical and Pathological Museum.
  - (b) Other Educational Research and Teaching Aid Facilities within the University system.

Teaching Aid Laboratory Chief. In this way he will be able to receive guidance and assistance while at the same time utilizing University-wide facilities wherever advantageous. This relationship will likewise preclude uneconomical duplicity in activities.

The sectional organization might consist of six technical assistants, if an active and energetic program is contemplated. Figure 1 illustrates a Section Chief with his five essential units. Experience has shown that these units are quite independent of each other and do not readily lend themselves to combination assignments. Once the teaching aids program gets into full swing, there is ample work to keep each unit fully occupied.

Here, again, the most important and first assistant to be selected would be the Chief of this Section. This man should be a full time figure. His background should include preferably a Master of Arts in Education with his major being in science. Wherever possible, he should have or at least pursue medical courses in order to better prepare himself for his teaching aid duties. He must be the administrative and coordinating head of the section, seeing that the desires, wishes, and directions of his department chairman are accomplished efficiently and accurately. In order to transform ideas, concepts, and words into pictures and visual actualities he will need to have available the services of an artist and draftsman. This latter will design and prepare charts, cartoons, diagrams, drawings, and mimeoscopic art work. The section chief should also have the services of a teaching aids technician—a man who can design and fabricate models, three dimen-

sional figures, and devices of all types. Again, he should have the services of a man skilled in photography in order to prepare slides, photographic pictures, balopticon material and possibly movies. This man could also supervise recordings. It is essential to have at least one clerical assistant who can prepare and reproduce mimeographic training material for all departments within the school. These duties are, of course, in addition to other clerical and stenographic ones. Finally, for the accumulating teaching aids and teaching aid equipment such as projection machines, amplifying devices, and screens the Section Chief will have to have a teaching aids librarian. This latter individual can, in addition to his library duties, act as projectionist, deliver teaching aids, and instruct others in the operation and care of various items of teaching aid equipment. Films, balopticon plates, slides, and charts require careful filing and cataloging if they are to be available whenever members of a teaching faculty desire them.

This organization, in the experience of the authors, would appear to represent the minimum grouping of job assignments that will assure a successful program of making instructors teaching conscious and after this objective has been achieved, assisting them in accomplishing their teaching objectives. No doubt some medical schools have organizations similar in structure and mission and probably all medical schools have at least functioning elements as described above. It is not presumed that this organizational unit is unique, but it is believed to be progressive and capable of improving any type of instruction. In support of the contention that a positive and progressive attitude should be taken toward improving our educational pattern of attack for the future, excerpts are quoted from two recent provocative articles by outstanding men in the educational field.

Dr. Ray Lyman Wilbur, in his address to the Fortieth Annual Congress on Medical Education and Licensure,<sup>7</sup> stated, "The medical student of today needs to have his instructors fan over the grist of the past and select those subjects on which he can best spend the limited period of his training." Again, "As our knowledge and experience grow, so must our educational methods change and develop." Finally, "As practical experience has brought about the discarding of much old therapeutics and old thinking, so must medical education discard freely in order to make room for the new."

In an article<sup>8</sup> entitled "The G. I. Way—Can Our Schools Teach It?" Professor Edgar Dale of Ohio State University's Bureau of Educational Research and an outstanding authority in the field of Visual Education, emphasized that the "G. I." way of teaching is merely a progressive teaching pattern developed by educational specialists. He further states that it represents common employment of "principles which have already been put into effect in some schools," and he makes the plea for civilian educators to re-adapt and develop this progressive pattern of instruction for civilian school use.

#### SUMMARY AND CONCLUSION

In summary, the following points discussed in this paper bear repetition.

1. A definition of "teaching consciousness" has been given and its importance to the overall problem of instruction has been emphasized.



2. Each of the five phases in the process of instruction has been briefly analyzed, and the statement made that complete awareness and comprehension of these phases are prerequisites before considering one as "teaching conscious."

3. The progressive educational movement commonly known as "audiovisual" or "visual sensory" instruction, but referred to more inclusively by the authors as "teaching aid consciousness" has been discussed in some detail.

4. Attention has been called to the potentialities inherent in the greater development and use of teaching aids in the future by medical faculties.

5. The obvious necessity for developing a high degree of "teaching consciousness, including teaching aid consciousness" within a medical faculty has been discussed, and the relatively greater responsibility of the medical teacher, when compared with other teachers, has been pointed out.

6. A new organizational and functional concept for a medical school, designed to develop a high state of "teaching consciousness" within its faculty has been presented and described somewhat in detail. The importance of selecting well qualified personnel for this unit is emphasized.

7. Provocative statements by progressive educational authorities have been introduced, calling attention to the desirability of and necessity for adopting progressive educational concepts and patterns.

In the foreword to the "Catalog of Training Films and Other Medical Training Aids, Medical Department, United States Navy," Vice Admiral Ross T. McIntire, M.C., Surgeon General of the Navy, epitomizes what the directing head of each teaching structure will, no doubt, emphasize more and more in the future. We quote: "The Bureau of Medicine and Surgery is attempting to make available to our medical personnel the best medical training aids which will be produced or procured. This catalog lists the chief aids which will be useful to large numbers. Requests for other films to be produced or procured in order to meet special needs will be welcomed and given careful consideration.

It is the hope of the Bureau that every officer connected with the Medical Department will familiarize himself with the audiovisual aids set forth herein and will make the greatest possible utilization of them."

In conclusion, the authors believe that a challenge has been given medical educators along with all others. If war forced our educators to adapt and develop progressive teaching principles for "G. I." instruction, surely the many problems facing medical educators in the peaceful atomic future demand an equally positive and realistic approach to the teaching of the future. Any organizational augmentation, designed for and capable of improving our present teaching methods, is a progressive step and would be a valuable addition to our present teaching structures, and consequently, should improve their patterns of instruction. It is the opinion of the authors that the inclusion of a "Department of Educational Development" similar to that described in this paper, is worthy of careful study and consideration by those in positions of responsibility and authority.

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## A Tuberculosis Teaching Program for the Medical Profession

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Early recognition of the disease process, early and easily available competent treatment and adequate isolation facilities constitute the three mutually dependent essential prerequisites of any contemplated program designed to control the incidence and mortality rate of pulmonary tuberculosis. Progress in the direction of accomplishing the first requirement has been very gratifying as a result of the increased utilization and perfection of mass radiography and modern case finding techniques during recent years. Consequently, the recognition of pulmonary tuberculosis in its early stages has become the rule rather than the exception in those localities where these methods are employed.<sup>1</sup> Unfortunately, progress in accomplishing the other two requirements has not been as encouraging. Many progressive state governments, however, have recognized the inadequacy of their existing sanatorium facilities and are formulating ambitious plans to relieve the situation with the possible assistance of federal funds. For the most part these accomplishments in tuberculosis control represent the contributions of the laity to the program. Now, the time has come when the medical profession must accept the full responsibility for the supervision of a successful conclusion of this campaign to which the laity has already dedicated its maximum effort.

To fulfill its obligation to society, in this respect, the profession must embark on an educational campaign among its own members in order to alleviate the chronic shortage of general practitioners who are reasonably familiar with the fundamental concepts of pulmonary tuberculosis. There is no valid excuse to offer a patient who must travel 50 to 100 miles in a hot sun or a cold drizzling rain to receive 200 c.c. of air intrapleurally—only an apology. Indeed, the therapeutic benefits to be expected in this disturbing circumstance may not even be sufficient to counteract the adverse influence of the strenuous trip on the disease process. Any attempt to correct this and similar disturbing situations will succeed only if a well-planned tuberculosis teaching program for the graduate, as well as the undergraduate student becomes an integral part of all medical school curricula. In this way we will be able to furnish the general practitioner with the fundamental knowledge of pulmonary tuberculosis necessary to prevent, diagnose and treat the disease intelligently. As a result of this program, there would be available in even the most remote communities a physician, who could offer limited, but effective treatment for pulmonary tuberculosis under the guidance of a consultant phthisiologist. This accomplishment by the medical profession would lessen the burden of the generally overtaxed sanatorium facilities and assure the ultimate success of the over-all tuberculosis control program.

The following is a brief outline of this proposed teaching program:

- I. Freshman Year
  - A. Anatomy
  - B. Histology
  - C. Organology
- II. Sophomore Year
  - A. Bacteriology
  - B. Pathology
  - C. Physiology
  - D. Immunology
  - E. Physical Diagnosis
  - F. X-Ray Interpretation
- III. Junior Year
  - A. Lectures
    1. Definition of Pulmonary Tuberculosis
    2. History
    3. Incidence
    4. Mortality Rate
    5. Predisposing Factors
    6. Etiology
    7. Anatomy of the Lung
    8. Physiology of Respiration
    9. Pathology and Pathogenesis
      - (a) Primary Infection
        1. Manner of Progression
        2. Manner of Retrogression
      - (b) Secondary Infection
        1. Manner of Progression
        2. Manner of Retrogression
      - (c) Ghon Tubercle
      - (d) Primary Complex
      - (e) Ranke Phenomenon
      - (f) Erituberculosis
      - (g) Cold Abscess
    10. Immunologic and Allergic Manifestations
      - (a) Tuberculin Test
        1. Cutaneous
        2. Intracutaneous
        3. Patch
    11. Clinical Features—Primary and Secondary Infection
      - (a) Present Illness
        1. Local signs and symptoms
        2. Constitutional signs and symptoms
      - (b) Past History
      - (c) Social History
      - (d) Family History
  12. Laboratory Features
  13. Criteria for Diagnosis
  14. Classification (X-Ray)
    - (a) Minimal
    - (b) Moderately advanced
    - (c) Far advanced
  15. Differential Diagnosis
    - (a) Pulmonary Diseases
    - (b) Other Thoracic Diseases
    - (c) Other Systemic Diseases
    - (d) Clinical and Laboratory Procedures to Aid in Differential Diagnosis
  17. Treatment
    - (a) Prophylactic
      1. BCG Vaccine
    - (b) Early recognition
      1. Tuberculin Test
      2. Mass Radiography
    - (c) Sanatorium Care
    - (d) Therapeutic Measures
      1. Medical
      2. Surgical
      3. Specific Chemotherapy and Antibiotics
  18. Clinical Status—Results of Treatment
    - (a) Apparently cured
    - (b) Arrested
    - (c) Apparently Arrested
    - (d) Quiescent
    - (e) Active
      1. Improved
      2. Unimproved
    - (f) Dead
  19. Public Health Aspects
    - (a) Control Measures
    - (b) Epidemiology
    - (c) Etc.
  20. Extra-pulmonary Tuberculosis
  - B. Tuberculosis Staff Conference at Sanatorium (Evaluation of old and new patients)
    1. Participants
      - (a) Phthisiologist
      - (b) Internist
      - (c) Thoracic Surgeon
      - (d) Other Specialties as indicated
      - (e) Resident
      - (f) Intern

- (g) Students
    - 1. Seniors (active—present cases)
    - 2. Juniors (observers)
  - IV. Senior Year (In Sanatorium)
    - A. Complete new patient work-up
      - 1. History in detail
      - 2. Physical Examination
      - 3. Laboratory Work
        - (a) Complete blood count
        - (b) Urinalysis
        - (c) Wassermann
        - (d) Sedimentation rate
        - (e) Tuberculin test
        - (f) Vital capacity
        - (g) Search for tubercle bacillus
          - 1. Sputum
          - 2. Gastric contents
          - 3. Urine
          - 4. Spinal fluid
          - 5. Draining sinuses
          - 6. Pleural fluid
          - 7. Etc.
      - (h) Other indicated procedures
    - 4. X-Ray Interpretation
    - 5. Diagnosis
    - 6. Prognosis
    - 7. Suggested treatment
  - B. Re-evaluation of old patients
  - C. Staff Conference (as above)
    - 1. Presentation of old and new patients
      - (a) Evaluation
      - (b) Suggested treatment
  - D. Clinical Work
    - 1. Fluoroscopic Examinations
    - 2. Administer Pneumothorax
    - 3. Perform Thoracenteses
- E. Demonstrations
  - 1. Bronchoscopy
  - 2. Lipiodol Instillation
  - 3. Various Surgical Procedures
    - (a) Intrapleural Pneumonolysis
    - (b) Phrenic Nerve Operations
    - (c) Thoracotomy
    - (d) Thoracoplasty
    - (e) Extrapleural Pneumothorax
    - (f) Etc.
- F. Short Thesis on Some Phase of Tuberculosis
- G. Ward Rounds
  - 1. Consideration of patients
  - 2. Presentation of thesis
- V. Intern and Resident Training
  - A. Service Rotation to Include Tuberculosis Sanatorium
  - B. Outpatient Tuberculosis Clinics
  - C. Tuberculosis Staff Conferences
  - D. Current Literature
  - E. Journal Clubs
  - F. X-Ray Conferences
  - G. Public Health Reports
  - H. Medical Meetings
  - I. Library Facilities
- VI. Program for General Practitioner
  - A. Tuberculosis Conferences
  - B. X-Ray Conferences
  - C. Planned Visits to Tuberculosis Sanatoria and Clinics
  - D. Current Literature
  - E. Public Health Reports
  - F. Medical Meetings

## DISCUSSION

The teaching program outlined above was purposely designed not to create specialists in the field of tuberculosis; but rather to prepare the general practitioner of medicine to meet his responsibilities in the campaign to control the disease. Although there is also an unquestionable shortage of competent phthisiologists and physicians primarily interested in pulmonary diseases in general, the lack of general practitioners who are tuberculosis conscious and adequately trained to recognize the disease and offer limited therapy is a more acute deficiency which demands the urgent attention of the medical profession. Since the general practitioner usually sees the patient first and often in the early stages of the disease, pursuance of this policy appears to be a rational and practical approach to the solution of this aspect of the over-all tuberculosis control problem.



If this proposed educational program appears too detailed and impossible to achieve, it is only because the adequate teaching of tuberculosis has been neglected for such a long time in our medical schools. Approximately 150 hours of instruction allocated for this specific purpose would be sufficient to accomplish the entire program. On this basis less than 3.5 per cent of the average medical school curriculum would be devoted to the study of a disease which, for example, was responsible for 5.4 per cent of all deaths in the white and for 11.3 per cent of all deaths in the Negro population in 1940.<sup>3</sup> One of our leading medical schools devotes 4 per cent of its total teaching time to the study of tuberculosis while another prominent school has assigned 500 hours to the teaching of this disease.<sup>2</sup> As a rule most of our schools are not as deficient in the amount of time devoted to the study of tuberculosis as they are in their failure to provide an intelligently integrated teaching program.<sup>2</sup> In the clinical years, the disease must be taught by a phthisiologist or a physician especially trained and interested in diseases of the chest in order to achieve the desired results. Instruction in the basic science years is generally adequate and should be left in the hands of the preclinical faculty. If medical schools throughout the country would take steps to strengthen or completely reorganize their tuberculosis teaching programs in accordance with these outlined suggestions, as the occasion warrants, the medical profession would soon be in a position to assume a dominant role in the crusade against this disease.

#### SUMMARY

1. The need for a well planned tuberculosis teaching program for the medical school graduate as well as the undergraduate student has been presented.
2. A program designed to satisfy this need has been outlined.

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## The Time Devoted to Physiology in Seventy-two United States Medical Schools

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The data presented in the accompanying tabulations have been supplied by the executive heads of the departments of physiology in the medical schools in the United States. They represent the teaching schedules for the year 1945-1946. The data were supplied in response to an initial questionnaire sent to all departments in the fall of 1944, and have been corrected by subsequent correspondence. In most instances this correspondence ended in the summer of 1945 when definite assurance of the schedule for the 1945-1946 session was received.

The hours as reported from the various departments are given in table 1. The lecture time as shown in the table includes time scheduled for didactic lectures, examinations and quizzes. Similarly, the laboratory time includes laboratory conferences and quizzes. It is believed that no "scheduled study time" in library or elsewhere has been included.

It will be noted that several schools are missing. Either the data from these have not been obtained in a form that permits the treatment to which those from other schools were subjected, or a doubt as to the accuracy of the available data has not been resolved up to the time of publication. The hours for Duke University have been omitted due to the fact that pharmacology and physiology are combined in this school.

There was no breakdown into hours per month in the original data, but they have been broken down into hours per calendar month by the arbitrary use of  $4\frac{1}{2}$  months as the length of a semester, and 3 months as the length of a trimester. This breakdown into hours per month throughout the physiology course in each school has been made in order to permit the preparation of a table of the average distribution of teaching hours in all schools combined, throughout the 36 calendar months usually constituting the four years of medical instruction. In the interests of conservation of space, a tabulation containing hours per month for each school is not given, but the totals at the bottom of such a tabulation, prepared though not published, are given in table 2. The average for each month as given in the table was obtained by dividing the total hours for each month by 72, the number of schools for which data are presented.

Examination of table 2 reveals that the "average medical school" (like the average man, non-existent) gives 14.58 total hours of physiology in the first semester of the first year, or less than one hour a week; 127.26 hours, or about 8 hours a week in the second semester of the first year; 103.88 hours, or about  $6\frac{1}{2}$  hours a week in the first semester of the second year; 22.36 hours, or about 1 hour a week in the second semester of the second year, and in the third year a negligible number of hours, less than one for the entire year.

There are extreme departures from this average distribution of hours. Some information on these may be found in table 3. The shortest calendar time in which the course in physiology is completed in any school is at Bowman Gray where the course is confined to one trimester. The longest is at Creighton, where the course is spread over two academic years.

There is a marked tendency to confine the course to a single semester. Twenty-nine schools do this, and with Bowman Gray added it can be said that there are 30 schools in which the course occupies one semester or less. Five more schools give the course in two trimesters, either in the first or second year. In all, 35 schools limit the course to either the first or the second year—not overlapping two years—and limit the work to from 3 to 6 months in that year.

More in conformity with the average distribution of hours, 11 schools give the course in two trimesters with a summer vacation intervening—i. e., in the latter portion of the first year, and the early part of the second. Twenty-two schools extend the course over a period equal to an entire academic year. In 12, the course occupies time from the beginning of the second semester of the first year, to the end of the first semester of the second year; in 6 the course extends throughout the first year; in 4 it extends throughout the second year. Three more schools give three semesters of physiology, and one, Creighton, runs the course throughout the second and third years. In all, there are 37 schools that may be classed together as tending to extend the time of the physiology course over a longer calendar period, as contrasted with the 35 schools that tend to restrict the course more in regard to calendar time.

A tabulation of the schools in descending order of the total hours of instruction in physiology is given in table 4. The average for the 72 schools is 269.042 hours. Missouri heads the list with 448 hours, followed closely by Nebraska with 442 hours, Rochester with 408, and Northwestern with 363. Johns Hopkins ends the list with 192 hours. Close competitors for the position at the lower extreme are Columbia, with 198 hours, Yale, with 204, Tennessee with 209 and Maryland with 210.

A tabulation of the schools in the descending order of lecture hours and a similar tabulation but in order of laboratory hours would be of interest. The latter tabulation is presented in table 5, in which lecture hours are also given but not in regular order.

On looking through this table (or through table 2) for information on lecture hours, we find Indiana University giving 176 hours, two other schools giving more than 150 hours, and 8 schools with hours in the 140's. The average for the 72 schools is 101 hours. At the other extreme, the University of Georgia gives 55 hours of lecture, the University of Virginia gives 57 and 7 other schools have lecture hours in the 60's.

No attempt has been made to investigate other conditions having a bearing on the number of lecture hours in any school, but it may not be amiss to mention certain general considerations. A student receiving 55 hours of lecture may carry away as much "textbook" knowledge of the subject as another receiving 176 hours, if he can make up the difference of 121 hours by reading. What reading he can do will be affected by the pressure of other studies in the same period of time. It would seem likely that in what we may call "low lecture" schools, there must be assurance of more reading time than in "high lecture" schools. In the latter, on the other hand, it might be found, if the matter were investigated, that little of the students' time was left unscheduled, that there was accordingly little reading time available, and that the physiology department in the school tended to assure the student a better mastery of the subject by telling him in lecture what it wanted him to know. It seems highly probable that an hour of lecture on a subject is a more efficiently invested hour, to the student, than an hour of reading on the same subject as an assigned topic.

It is more difficult to believe that any completely effective compensation can be made in the case of schools with low laboratory time, as compared with those that are high in this respect. It would be interesting to know if schools with low laboratory time have worked out any unusually efficient methods of laboratory teaching. We have had some experience with attempts in this direction, and believe that in effect some 50 per cent may be added to the actual laboratory time by having all apparatus set up for the student before he comes to the laboratory. This gain involves an obvious loss that the physiology department may not be willing for him to suffer, an operative experience manually, that cannot fail to increase the significance of the experiment to the student.

Looking at laboratory time in table 5, we see Missouri heading the list with 384 hours. Nebraska with 272 hours and Rochester with 268 hours may be said to follow from afar off. Indiana University ends the list with 96 hours, and George Washington with 108 hours, and Wisconsin with 111, are essentially in the same position. The average laboratory time in the 72 schools is 169 hours.

The assembling of the data presented here was undertaken in the first place because one of the authors felt himself to be uninformed on some rather elementary matters regarding the teaching of physiology in other schools. In requesting the information of others the authors assumed the obligation of making it generally available. Acknowledgment is made to the many department executives who patiently supplied and re-supplied the data.

TABLE 1.—PHYSIOLOGY TEACHING SCHEDULES IN 72 U. S. MEDICAL SCHOOLS  
FOR 1945-1946 (AS OF SUMMER 1945).

SCHOOLS	Lea. or Lab.	FIRST "YEAR" <sup>a</sup>				SECOND "YEAR" <sup>a</sup>				Hours Total Course
		1st Sem.		2nd Sem.		1st Sem.		2nd Sem.		
		1-Q.	2-Q.	3-Q.	4-Q.	1-Q.	2-Q.	3-Q.	4-Q.	
		1-Tri.	2-Tri.	3-Tri.		1-Tri.	2-Tri.	3-Tri.		
1. Ala. U. Sch. Medicine	Le. La.			64 176		16 32			80 208	
2. Albany Med. College	Le. La.			88 152					88 152	
3. Ark. Univ. Sch. Med.	Le. La.					55 77	44 66		99 143	
4. Baylor Med. College	Le. La.			33 99		44 99			77 198	
5. Boston Univ. Sch. Med.	Le. La.			84 153					84 153	
6. Bowman Gray Sch. Med.	Le. La.			106 221					106 221	
7. Buffalo U. Sch. Med.	Le. La.			44 99	33 66				77 165	
8. Calif. Univ. Sch. Med.	Le. La.			80 144					80 144	
9. Chicago U. Sch. Med.	Le. La.			33 66		33 66	33 66		99 198	
10. Colorado U. Sch. Med.	Le. La.			48 96		52 60			100 156	
11. Columbia U. Coll. Phys.	Le. La.			72 126					72 126	
12. Cornell U. Sch. Med.	Le. La.			46 77		64 77			110 154	
13. Creighton U. Sch. Med.	Le. La.					33 44	30 40	35b 44	129 128	
14. Dartmouth U. Sch. Med.	Le. La.	48		48		48 128			144 128	
15. Emory Univ. Sch. Med.	Le. La.					112 190			112 190	
16. Georgetown U. Sch. Med.	Le. La.					48 77		48 67	96 144	
17. George Wash. U. Sch. Med.	Le. La.			130 108					130 108	
18. Georgia U. Sch. Med.	Le. La.			22 66		33 99			55 165	
19. Hahneman Med. Col.	Le. La.	64 154		32 48					96 202	
20. Harvard Medical Sch.	Le. La.			60 194					60 194	
21. Howard U. Col. Med.	Le. La.					48 72	48 72		96 144	
22. Illinois U. Col. Med.	Le. La.			48 57		48 30	48 57		144 144	
23. Indiana U. Sch. Med.	Le. La.	96 48		80 48					176 96	
24. Iowa U. Col. Med.	Le. La.		72 72	72 72					144 144	
25. Jefferson Med. Col.	Le. La.					96 152			96 152	
26. Johns Hop- kins S. Med.	Le. La.	24 0		48 120					72 120	
27. Kansas U. Sch. Med.	Le. La.			48 96				48 48	96 144	
28. Long Island Col. Med.	Le. La.			44 72		54 52			98 124	
29. La. State U. Col. Med.	Le. La.			144 144					144 144	



SCHOOLS	Rec. or Grad.	FIRST "YEAR" <sup>a</sup>				SECOND "YEAR" <sup>a</sup>				Hours Total Course
		1st Sem.		2nd Sem.		1st Sem.		2nd Sem.		
		1-Q.	2-Q.	3-Q.	4-Q.	1-Q.	2-Q.	3-Q.	4-Q.	
		1-Tri.	2-Tri.	3-Tri.		1-Tri.	2-Tri.	3-Tri.		
30. Louisville U. Sch. Med.	Le. La.					80 160				80 160
31. Loyola U. Sch. Med.	Le. La.			96 128		32 32				128 160
32. Marquette U. Sch. Med.	Le. La.					108 198				108 198
33. Maryland U. Sch. Med.	Le. La.					90 120				90 120
34. Med. Evang., Col. of	Le. La.			83 144						83 144
35. Meharry Med. Col.	Le. La.			60 156		36 72				96 228
36. Michigan U. Med. Sch.	Le. La.					80 192				80 192
37. Minn. U. Med. Sch.	Le. La.					88 66	55 55			143 121
38. Mississippi U. Sch. Med.	Le. La.					60 135		45 45		105 180
39. Missouri U. Sch. Med.	Le. La.			32 192		32 192				64 384
40. Nebr. Univ. Col. Med.	Le. La.					85 136		85 136		170 272
41. N. Y. Univ. Col. Med.	Le. La.		55 77	50 70		10 30				115 177
42. N. Y., Med. College of	Le. La.			76 144						76 144
43. N. C. Univ. Col. Med.	Le. La.		36 48	84 144						120 192
44. Northwest- ern Med. S.	Le. La.			44 66		44 66		77 66		165 198
45. Ohio State U. Col. Med.	Le. La.					50 66	60 60			110 126
46. Okla. U. Col. Med.	Le. La.			48 144		32 0				80 144
47. Oregon U. Med. Sch.	Le. La.			36 72		36 72	36 72			108 216
48. Penn. U. Sch. Med.	Le. La.			118 157						118 157
49. Pittsburgh U. Sch. Med.	Le. La.					76 209				76 209
50. Rochester U. Sch. Med.	Le. La.			80 168				60 100		140 268
51. St. Louis U. Sch. Med.	Le. La.					72 198		36+36c		144 198
52. South Carolina Sch. Med.	Le. La.					90 210				90 210
53. S. Dakota U. Sch. Med.	Le. La.					72 108	36 36			108 144
54. Stanford U. Sch. Med.	Le. La.			58 138		34 69				92 207
55. Syracuse U. Col. Med.	Le. La.			104 150						104 150
56. Temple U. Sch. Med.	Le. La.			60 90		55 66				115 156
57. Tenn. U. Col. Med.	Le. La.			44 66	33 66					77 132
58. Texas U. Med. Col.	Le. La.	15 0		75 140						90 140
59. Tufts Col. Med. Sch.	Le. La.			64 192						64 192

SCHOOLS	Lec. or Lab.	FIRST "YEAR" <sup>a</sup>				SECOND "YEAR" <sup>a</sup>				Hours Total Course
		1st Sem.		2nd Sem.		1st Sem.		2nd Sem.		
		1-Q.	2-Q.	3-Q.	4-Q.	1-Q.	2-Q.	3-Q.	4-Q.	
		1-Tri.	2-Tri.	3-Tri.	3-Tri.	1-Tri.	2-Tri.	3-Tri.	3-Tri.	
60. Tulane U. Sch. Med.	Lec. Lab.			85 153					85 153	
61. Utah U. Sch. Med.	Lec. Lab.		22 66	44 132					66 198	
62. Vanderbilt U. Sch. Med.	Lec. Lab.			60 198					60 198	
63. Vermont U. Col. Med.	Lec. Lab.			64 96	48 48				112 144	
64. Virginia, Med. Col. of	Lec. Lab.				64 192				64 192	
65. Virginia U., Sch. Med.	Lec. Lab.			22 62	35 115				57 177	
66. Washington U. Sch. Med.	Lec. Lab.			64	55 135				119 135	
67. Wayne U. Col. Med.	Lec. Lab.			44 77	44 77				88 154	
68. Western Re- serve Med.	Lec. Lab.				122 140				122 140	
69. West Va. U. Sch. Med.	Lec. Lab.			36 80	84 88				120 168	
70. Wisc. U. Med. Sch.	Lec. Lab.	36		72 111					108 111	
71. Women's Med. Col. Phil.	Lec. Lab.				73 79		72 68		145 147	
72. Yale Univ. Sch. Med.	Lec. Lab.	6		54 144					60 144	

a. "Year"—Approximately 9 calendar months.  
b. Also 33 hours in 3rd year.  
c. 3rd year, 2d semester.

Average lecture hours.....101.416  
Average laboratory hours .....187.625  
Average hours, lecture and laboratory.....269.041

TABLE 2.—AVERAGE PHYSIOLOGY HOURS EACH MONTH AND EACH YEAR IN 72 U. S. MEDICAL SCHOOLS, WITH TOTALS ON WHICH AVERAGES ARE BASED.

Month	1st Year		2nd Year		3rd Year	
	Total hours (all 72 schools)	Ave. hours (per school)	Total hours (all 72 schools)	Ave. hours (per school)	Total hours (all 72 schools)	Ave. hours (per school)
1	108.4	1.50	1905.2	26.46	3.6	0.05
2	108.4	1.50	1905.2	26.46	3.6	0.05
3	108.4	1.50	1870.5	25.98	3.6	0.05
4	267.7	3.58	1854.6	18.81	3.6	0.05
5	935.8	12.99	888.5	12.34	7.6	0.11
6	1614.0	22.42	422.4	5.87	11.6	0.16
7	2372.2	32.95	247.4	3.44	11.6	0.16
8	2353.8	32.69	247.4	3.44	11.6	0.16
9	2353.8	32.69	247.4	3.44	11.6	0.16
Average:	1st year, 141.84		2d year, 126.24		3d year, 0.96	

TABLE 3.—CALENDAR TIME OVER WHICH PHYSIOLOGY TEACHING IS DISTRIBUTED IN 72 U. S. MEDICAL SCHOOLS.

Calendar Time	Number of Schools			Totals	Cumulative Totals	
	All time in 1st year	Time in both 1st & 2d years	All time in 2d (or 2d & 3d) yrs.		Downward	Upward
1 Trimester .....	1	---	---	1	1	72
1 Semester .....	16	---	13	29	30	71
2 Trimesters .....	3	11	2	16	46	42
1 Academic Year .....	6	12	4	22	68	26
4 Trimesters .....	---	---	---	---	---	---
3 Semesters .....	---	2	1	3	71	4
5 Trimesters .....	---	---	---	---	---	---
2 Academic Years .....	---	---	1	1	72	1
Totals .....	26	25	21	72	---	---

TABLE 4.—TOTAL HOURS DEVOTED TO PHYSIOLOGY IN 72 U. S. MEDICAL SCHOOLS.

1. Missouri University School of Medicine.....	448
2. Nebraska University College of Medicine.....	442
3. Rochester University School of Medicine.....	408
4. Northwestern University Medical School.....	363
5. St. Louis University School of Medicine.....	342
6. Bowman Gray School of Medicine.....	327
7. Meharry Medical College.....	324
8. Oregon University Medical School.....	324
9. North Carolina University College of Medicine.....	312
10. Marquette University School of Medicine.....	306
11. Emory University School of Medicine.....	302
12. South Carolina School of Medicine.....	300
13. Stanford University School of Medicine.....	299
14. Chicago University School of Medicine.....	297
15. Hahneman Medical College.....	295
16. New York University College of Medicine.....	292
17. Women's Medical College of Philadelphia.....	292
18. Alabama University School of Medicine.....	288
19. Illinois University College of Medicine.....	288
20. Iowa University College of Medicine.....	288
21. Louisiana State University College of Medicine.....	288
22. Loyola University School of Medicine.....	288
23. West Virginia University School of Medicine.....	288
24. Mississippi University School of Medicine.....	285
25. Pittsburgh University School of Medicine.....	285
26. Baylor Medical College.....	275
27. Pennsylvania University School of Medicine.....	275
28. Dartmouth University School of Medicine.....	272
29. Indiana University School of Medicine.....	272
30. Michigan University Medical School.....	272
31. Temple University School of Medicine.....	271
32. Cornell University School of Medicine.....	264
33. Minnesota University School of Medicine.....	264
34. Utah University School of Medicine.....	264
35. Western Reserve University Medical School.....	262
36. Vanderbilt University School of Medicine.....	258
37. Creighton University School of Medicine.....	257
38. Colorado University School of Medicine.....	256
39. Tufts College School of Medicine.....	256
40. Vermont University School of Medicine.....	256
41. Virginia, Medical College of.....	256
42. Harvard University School of Medicine.....	254
43. Syracuse University School of Medicine.....	254
44. Washington University School of Medicine.....	254
45. South Dakota University School of Medicine.....	252
46. Jefferson Medical College.....	248
47. Arkansas University School of Medicine.....	242
48. Buffalo University School of Medicine.....	242
49. Wayne University School of Medicine.....	242
50. Albany Medical College.....	240
51. Georgetown University School of Medicine.....	240
52. Howard University School of Medicine.....	240
53. Kansas University School of Medicine.....	240
54. Louisville University School of Medicine.....	240
55. Tulane University School of Medicine.....	238
56. George Washington University School of Medicine.....	238
57. Boston University School of Medicine.....	237
58. Ohio State University School of Medicine.....	236
59. Virginia University School of Medicine.....	234
60. Texas University School of Medicine.....	230
61. Medical Evangelists, College of.....	227
62. California University School of Medicine.....	224
63. Oklahoma University School of Medicine.....	224
64. Long Island College of Medicine.....	222
65. Georgia University School of Medicine.....	220
66. New York Medical College.....	220
67. Wisconsin University School of Medicine.....	219
68. Maryland University School of Medicine.....	216
69. Tennessee University School of Medicine.....	209
70. Yale University School of Medicine.....	204
71. Columbia University School of Medicine.....	198
72. Johns Hopkins University School of Medicine.....	192
Average.....	269.042

TABLE 5.—HOURS OF PHYSIOLOGY IN 72 UNITED STATES MEDICAL SCHOOLS,  
ARRANGED ACCORDING TO LABORATORY TIME.

	Lecture Hours	Laboratory Hours
Missouri University School of Medicine .....	64	354
Nebraska University School of Medicine .....	170	272
Rochester University School of Medicine .....	140	268
Meharry Medical College .....	96	228
Bowman Gray School of Medicine .....	106	221
Oregon University School of Medicine .....	108	216
South Carolina School of Medicine .....	90	210
Pittsburgh University School of Medicine .....	76	209
Alabama University School of Medicine .....	80	208
Stanford University School of Medicine .....	92	207
Hahneman Medical College .....	93	202
Baylor Medical College .....	77	198
Chicago University School of Medicine .....	99	198
Marquette University School of Medicine .....	108	198
Northwestern Medical School .....	165	198
St. Louis University School of Medicine .....	144	198
Utah University School of Medicine .....	66	198
Vanderbilt University School of Medicine .....	60	198
Harvard Medical School .....	60	194
Michigan University Medical School .....	80	192
North Carolina University Medical College .....	120	192
Tufts College Medical School .....	64	192
Virginia Medical College .....	64	192
Emory University School of Medicine .....	112	190
Mississippi University School of Medicine .....	106	180
New York University College of Medicine .....	115	177
Virginia, University of, School of Medicine .....	57	177
West Virginia University School of Medicine .....	120	168
Buffalo University School of Medicine .....	77	166
Georgia University School of Medicine .....	55	165
Louisville University School of Medicine .....	80	160
Loyola University School of Medicine .....	128	160
Pennsylvania University School of Medicine .....	118	157
Colorado University School of Medicine .....	100	156
Temple University School of Medicine .....	115	156
Cornell University School of Medicine .....	110	154
Wayne University Medical College .....	88	154
Boston University School of Medicine .....	84	153
Tulane University School of Medicine .....	85	153
Albany Medical College .....	88	152
Jefferson Medical College .....	96	152
Syracuse University Medical College .....	104	150
Women's Medical College of Philadelphia .....	145	147
California University School of Medicine .....	80	144
Georgetown University School of Medicine .....	96	144
Howard University Medical College .....	96	144
Illinois University Medical College .....	144	144
Iowa University Medical College .....	144	144
Kansas University School of Medicine .....	96	144
Louisiana State University Medical College .....	144	144
Medical Evangelists, College of .....	83	144
New York, Medical College of .....	76	144
Oklahoma University Medical College .....	80	144
South Dakota University School of Medicine .....	108	144
Vermont University Medical College .....	112	144
Yale University School of Medicine .....	60	144
Arkansas University Medical College .....	99	143
Texas University Medical College .....	90	140
Western Reserve Medical School .....	122	140
Washington University School of Medicine .....	119	136
Tennessee University Medical College .....	77	132
Creighton University School of Medicine .....	129	128
Dartmouth School of Medicine .....	144	128
Columbia University College of Physicians and Surgeons .....	72	126
Ohio State University Medical College .....	110	126
Long Island Medical College .....	98	124
Minnesota University Medical School .....	148	121
Johns Hopkins School of Medicine .....	72	120
Maryland University School of Medicine .....	90	120
Wisconsin University Medical School .....	108	111
George Washington University School of Medicine .....	130	108
Indiana University School of Medicine .....	176	96

## Genetics in the Medical Curriculum

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In recent years, increasing attention has been focused on the problem of teaching genetics in premedical and medical courses. Numbers of articles by Macklin and others emphasize the desirability of more accurate knowledge of the facts of human inheritance in the minds of future physicians.<sup>1</sup> Some medical educators have been concerned about this lack of basic training and have suggested various remedies. They, as well as most biologists, are aware of the fact that the acquisition of a knowledge of the principles of genetics in premedical courses is haphazard and is subject in large part to the personal whims of the student when he is selecting courses for study. Recently, Hamburger<sup>2</sup> expressed the opinion of many biologists that genetics should be a required subject in the premedical curriculum. To any teacher of preclinical subjects in the medical curriculum, two facts are obvious. One is the variety of training exhibited by the various students in the class, ranging from a good knowledge of fundamentals to almost complete ignorance. The other noteworthy fact is that the more fortunate students who have had the advantage of a college course in genetics often do not have the correct approach to genetic problems of medical interest. The students with no preliminary training should be started from the beginning, and very seldom are. For students with previous training, proper orientation from medical instructors is invaluable.

Realizing that a knowledge of genetics is one of the basic needs of medical students and that many of their students are lacking in this respect, many medical schools have attacked the problem directly. In some schools orientation lectures have been given at the beginning of the freshman year. In other schools, series of lectures on genetics have been given in one or more of the regular courses where it was thought the knowledge could be best presented. In a few schools, formal courses in medical genetics, elective or required, are now offered.

In our school a series of orientation lectures and demonstrations (10 hours) has been given in the embryology course during the past three years. Physicians with good training in genetics have been invited to give lectures along with the regular instruction. We have found that, despite the already crowded curriculum, many students were keenly interested, particularly those who had some previous training.

In order to guide us in future attempts of this kind, we thought it desirable to find out as accurately as possible how other medical schools have attacked



this problem. For this purpose we prepared a questionnaire, a copy of which was sent to the dean of each medical school in the United States and Canada. The questionnaire was designed to give us information concerning the extent of instruction in medical genetics, as well as opinions on its value to the medical student. Further comments and criticisms were invited. Of the 84 questionnaires which were sent out, 60 were filled in and returned.

FACTS AND OPINIONS OF SIXTY MEDICAL SCHOOLS CONCERNING INSTRUCTION  
IN MEDICAL GENETICS.

Number of Schools	Per Cent	Facts and Opinions
7	11.6	Offer formal course in medical genetics.
25	41.6	Give lectures in genetics in various courses.
48	80.0	Consider knowledge of genetics necessary.
25	41.6	Consider instruction in genetics necessary in medical curriculum.
10	16.6	Consider requirement of genetics in premedical curriculum sufficient.
6	10.0	Consider instruction in genetics necessary in premedical as well as medical curriculum.
5	8.3	Consider medical curriculum too crowded for any additions.

Of the 60 schools answering the questionnaire, seven indicated that they now offer a formal course in medical genetics. Of these, four are given in the freshman year by an instructor in the department of anatomy. The remaining three are given in the department of medicine. The hours range from 7 to 30, the average being 15. Most of these courses were begun recently but two date back to 1934-1935. Only one is an elective.

Lectures on medical genetics in various courses are given in 25 of the 60 schools. At 15 of these, the lectures are given in histology and embryology (chiefly in embryology); at 5, they are given in anatomy; 2 in physiology; 1 in pathology; 1 in all the preclinical courses; and 3 in clinical courses. The number of hours devoted to these lectures was stated definitely in 18 of the 27 replies. The range is from 2 to 13 hours, the average being 5. Only 9 of the schools had any lectures in genetics prior to 1935.

Many comments and criticisms were received. Although 80 per cent of the replies showed that a knowledge of genetics is indicated for the medical student, the suggestions concerning the time and place for the instruction were varied. About 40 per cent thought that genetics should be taught in some form during the medical course. About 17 per cent stated definitely that genetics should be a premedical requirement, and 10 per cent thought it should be included in both premedical and medical courses, with emphasis on fundamentals in the premedical course and emphasis on the practical application to the human subject in medical courses. In 8 per cent of the replies the medical curriculum was considered too crowded for additions of any kind.

Judging from our own experience and from the facts, comments and criticisms presented in the returned questionnaires, we believe that our students

should keep abreast of the rapidly expanding field of genetics, the human aspects of which are becoming more and more significant in the social aspects of medicine. In order to accomplish this, we think that the logical approach should consist of the following steps:

(1) Instruction in fundamental genetic principles should be required in the premedical curriculum.

(2) A series of lectures in medical genetics should be given in the embryology course or some other preclinical course, depending upon the availability of a qualified instructor. These lectures should be designed to orient the student to genetic problems of medical interest, and should include a consideration of all the genetic principles pertinent to the study of medicine. Supplemental lectures by a practicing physician can also be of value in demonstrating to the student his future need of an understanding of practical human genetics.

(3) When subjects with genetic implications are encountered in clinical courses, the instructor should encourage discussion and explanations of the principles involved.

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3. HAMBURGER, V.: Biology in the premedical curriculum. *Science*, 102:511-513, 1945.

## The Way Out

### Postwar Medical Temptations and Solutions

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#### I

#### THE DOCTOR'S REAL TEMPTATION

These are days of change. Whirl is indeed king. Everyone knows that. "Survey, then plan" would seem to be a reasonable course for us doctors,—which is why, for example, the American Academy of Pediatrics has recently undertaken its national study of child health services. Now is the time for us to plan in such a way that we may not be "tempted" to give the people anything less than the best possible medical care.

Perhaps, I think too well of my profession; but I am not including "ordinary greed" among the medical temptations under consideration. By this I mean the kind of thing which more or less justified George Bernard Shaw's dictum that there is no greater menace to society than that of a starving doctor: making unnecessary house calls, removing normal appendices or tonsils, etc.; or in the event of the spread of prepayment or insurance medicine, "holding back," giving patients less than full measure, pressed down and running over. After thirty years in the profession, I can say with assurance that the conscienceless medical crook is a rare bird of prey. With increasing care in selection of medical students, especially plus more watchful application of ethical criteria, he will become still rarer.

The great majority of M.D.'s deserve Stevenson's famous tribute. They even deserve the encomiums which, significantly enough, are paid them when they die young: "No patient was too poor for him to see at any hour of the day or night. He couldn't bring himself to refuse to add another family to his overcrowded list."—etc.

The great and insidious temptation for us medicos is exactly that: to try to do too much. One's practice, or one's research, is the right size for a day or so: too small before that day, too unwieldy afterward. Being a practitioner, I can speak better for that group. For the laboratory investigators and teachers, smaller in number, often brilliant, always underpaid, suffice it that they are more nearly masters of their fate, and far more commonly get a good night's sleep.

Among the practitioners, the besetting sin, the great transgression,—"taking on" more patients than can be given proper care—assails physicians, pediatricians, general practitioners far more than it does the surgeons. Those who wield the knife must do so skilfully—and not too often. They should not be mere technicians, bone carpenters, intestinal tailors. Their diagnostic judgment, their

familiarity with the principles of physiology and biochemistry should take precedence over their maneuverings with sterile hardware. Thus, their training, especially in so difficult a field as, for example, that of neurosurgery, requires many years, and entitles them to some, at least, of that extra emolument which at times annoys the bill payer of the family and forsooth the hard-plugging medicos who call for surgical help.

This leads us to our main objective: run-of-the-mill medical practice. Of this we teach our students that perhaps ninety per cent will recover no matter what the doctor does; that the remaining ten per cent, plus knowledge and application of preventive measures, more than justify—nay, require—his existence.

## II

### THE CHANGING MEDICAL SCENE

Woe to our lay brethren when we physicians have the wrong idea of what constitutes adequate medical care! Conversely, and fortunately, woe to us physicians when our patients are educated to the point of demanding the good care which we in our complacency (seldom laziness, please note) fail to provide. Complacency? Yes, all too often; but it is likely to be the complacency born of overwork,—of toil so constant, so exacting that it not only makes the toiler put a high value on his toil, but also prevents him from comprehending how inadequately it is distributed.

Adequate medical care: here definition is vital. It is not, has not been, and cannot be the same from year to year. A generation ago, a doctor might, in the language of Oliver Wendell Holmes,

"Skip upstairs, inquire, inspect, and touch,  
Prescribe, take leave, and off to twenty such."

He could, and did, glance at a tongue, take temperature, pulse, and respiration, thump a chest, write an all inclusive prescription; and inasmuch as little more was known of accurate diagnostic methods, inasmuch as therapy was mainly palliative anyway, he could fairly be said to have done his duty.

From the patient's point of view as well as the doctor's, how the picture has changed! Now, if careful history taking and physical examination leave any doubt about the diagnosis, the physician or the surgeon (or both) can and must resort to blood counts, blood chemistry, electrocardiograms, various x-ray procedures. Patients may, and a few do grumble at the expense of these valuable aids. But in the doubtful cases, they not only reduce diagnostic error to a minimum; they lead to the institution of proper therapy.

Research being what it is (though by no means what it could be with adequate financial support) we cannot call it mere luck that chemical and biological methods of treatment have kept pace with, if not outstripped, methods of diagnostic precision. Who should or should not receive a sulfa drug, or penicillin? Of which patient can we say, "Put a needle in there and you'll get pus?" More and more, the correct answers are forthcoming. So often is this true, that gratitude on the part of patients is reaching an inverse ratio. They don't know what

they're missing! Since the introduction of the sulfa drugs, the reduction of the number of mastoidectomies, of rib resections for empyema, etc., is obvious to us older practitioners. As for the patients, one doctor waggishly wrote:

"I'm glad recovery's so quick,  
But they don't realize they've been sick."

Each patient, then, must have more time and effort spent on him, even though present day treatment is far more efficacious than that of a decade ago. "It's coming to him," whether he's rich or poor, and he knows it.

### III

#### THE COUNTRY DOCTOR

This kindly, omniscient hero of song and story, who, as one admirer inaccurately put it, "could treat everything from an ingrowing toenail to a brain tumor," is making his exit. Medical science has developed to the point where no one practitioner, however "general," can cover it with justice to the patient. But ability to recognize, and, when necessary, to call in those who best can help in rare and difficult conditions requires and will continue to require skilful practitioners.

Fortunately, means of communication and transportation have developed simultaneously with medical knowledge, so that now only a few missionaries, or pharmacists' mates in submerged submarines are likely to find demands for such impossible versatility thrust upon them. Rural practitioners, and urban ones too, owe it to their patients to send them to specialists and to well-equipped "medical centers" when they develop evidences of rare or difficult maladies.

Again, the "country doctor," without the stimulus of a medical school whose faculty and students would "keep him on his toes,"—without libraries, scientific meetings and discussions,—is all too likely to forget that when a doctor lets himself get too busy with patients, he loses touch with medical progress. "The busier he is the dumber he gets" may apply to him, and painfully. Constant ringing of the telephone, irregular interrupted meals, all too little sleep, help make for exhaustion rather than alertness. Think, for instance, of the war-time situation in one Missouri town of five thousand, cared for by two doctors both over seventy!

### IV

#### THE CITY DOCTOR

Naturally, the above considerations constitute a lure to the younger physician to practice in the medically more stimulating urban centers. Here he is led away from, rather than into, the temptation to drift into archaic or sloppy methods of work. Here others can help keep him from being too overworked to give his best to his patients.

As far as financial pitfalls are concerned—keeping in mind that the war is now over—it ordinarily takes the city practitioner longer to clear expenses; but ultimately his income, like his outgo, is higher. His chief urge, depending on his character and that of his wife, is to make it too high. If he has too much



social conscience, his charity work alone can run him into an early grave—where even the poor will have to admit he can't help them. Happily, physicians with social consciences are not as rare as many of the laity think. One such M.D. told me in all seriousness that the really valuable part of his work was that for which he got no payment. As might be expected, such men—and women—carry more than their share of the "charity load;" witness the late Dr. Williams of the New York Hospital, who during World War I gave fifty hours of his time without pay each week, and "spent the rest making a living." He lived much longer than any of his friends had expected.

## V

## THE ANSWER

Clearly, medical progress being what it is, the doctor's training can never stop, must never lag behind his practice,—an end which will be thwarted by overwork as it will by laziness. Even since the end of the war, the doctors can't keep up with the demands upon them. Overwork is still the order of the day—and night. Medical care, even for the people of America, is still lamentably inadequate. There can be only one answer: more doctors—with the immediate proviso that quality must not be sacrificed to quantity.

The validity of this answer is well attested by Dr. Martha M. Eliot, Associate Chief of the Children's Bureau (Testimony before the Senate Committee on Education and Labor, May 1, 1946): "We must find ways and means, nationally and in the states, of training a sufficient number of professional people. We have now about 2,500 pediatricians. We estimate that we need at least 7,400. We need probably 5,000 more obstetricians, 1,000 more orthopedists. We need 34,000 dentists trained in children's dentistry. We have 19,000 public health nurses and need 50,000 more. We need at least 15,000 additional graduate nurses for institutional and private duty. We need some 10,000 additional psychiatrists, to expand services for children particularly into areas now without them.

"Over 100,000 babies die in their first year of life in the United States. The lowest rate in 1943 was in Connecticut, 30 per 1,000 live births. In New Mexico, 92 babies died in their first year per 1,000 live births. Not only do mothers and babies have a better chance to survive in one part of the country than another, but they are better off if they are born into white rather than Negro families. The maternal death rate for Negro mothers in 1943 was 143 per cent, the infant death rate 64 per cent higher than for white. . . . We must tackle this problem with the same ingenuity with which we organized ourselves for action during the war, but utilizing the lessons we learned from the war-time programs."

Dean Raymond B. Allen (Medical Education and the Changing Order, Commonwealth Fund, N. Y., p. 127 ff.), discussing the supply of medical students and physicians, writes: "Of 12,200 applicants for admission to medical schools in 1930 (U. S. A.), 5,849 students were admitted. Beginning in 1940, the schools increased their enrollments in the first year class by 10 to 15 per

cent." This, with "acceleration," means that between 1942 and 1948 there will have been graduated about 10,000 more doctors than would normally have been the case.

"It is well known," Dr. Allen adds, "that there are more applicants for admission to medical schools than there are places in the first year class, but it is not widely appreciated that the ratio is only about two to one. All of those rejected are mediocre to poor aspirants." "Moreover, some students who are admitted represent very poor academic risks."

Here, now, is the nub of the matter. If Dr. Allen is correct in saying that all the rejected aspirants for admission to medical schools are mediocre to poor students, then any suggestion for continuing increased enrollments into peacetime is unsound. It would be far better to take steps as immediate and drastic as possible toward two kinds of redistribution of doctors: (1) Attract more, better, and younger medical men and women to small towns by providing better county hospital and laboratory facilities—a procedure long advocated, delayed mainly by lack of funds and building materials, and presenting but one valid drawback—that no matter how much chromium-plate and white enamel the new operating-rooms might display, the quality of major and special surgery performed therein is likely to be of less than the highest order. Few general practitioners in the country (or the city) have any desire to attempt such surgery anyway; they are glad to drop their "hot potatoes" into the laps of the city specialists.

(2) The second type of redistribution referred to must unfortunately remain hypothetical—no matter how desirable: the early classification of medical students into those electing surgery and its specialty branches, including obstetrics and gynecology, and those electing internal medicine and pediatrics. Such classification is impracticable because (a) many students do not—and should not—decide until the latter part of the senior year about the specialized work, if any, they want to do; and (b) the general hospitals, where as interns they really learn diagnosis and treatment, contain a proportion of surgical patients far higher than that which will obtain in their private practice. In the medical branches only a very small fraction of the patients require hospitalization. Thus the desideratum of training a large number of medical and general practitioners; and to "supertrain" a relatively few surgeons, is a procedure which cannot be determined upon early in the medical course.

Any dean, or executive faculty would, and should, view with alarm an attempt to increase the student enrollment in his or their medical school. Each school has its laboratory capacity, its setup for hospital teaching, its preclinical and clinical teaching personnel. Only the strain of war, the call of patriotism, and government money have been capable of producing expansion here. But the need has not passed with the coming of peace.

It is indicated from the foregoing that our medical schools should continue in peacetime to produce more graduates. But before discussing how the schools and hospitals are to give the additional students adequate training, it is abso-

lutely essential to establish that the additional number of applicants needed, but at present rejected, would be good to excellent, rather than mediocre to poor material.

First, we should by now be in a position to assess the quality of the increment taken in during the war. It is my belief that their services will prove to be of great value if only by comparison with the extent to which their lack would be felt.

Again, although as recognized an authority as Dr. Allen states that only about twice as many applicants are rejected as accepted, in many of the best schools, the rate is far higher. In at least one instance, 1,200 applied and less than 100 were accepted for the Freshman class. (Many of these were, of course, "multiple applications.")

If, then, I am correct in believing that the wartime increase of 15 per cent in medical school enrollments can and should be absorbed in peacetime, without "acceleration," the question arises whether several new medical schools should be opened, or whether the apparently impossible task of continuing to absorb the wartime increment of 10 to 15 per cent into the existing Class A schools should be undertaken. Would such schools *ipso facto* lose their Class A status? Could their faculties, their exchequers "manage"? Could their hospitals and clinics be "stretched" to accommodate the "load"?

Obviously, hospitalization is now everywhere inadequate. Even the older staff members have difficulty getting their patients admitted. Younger men graduating from their internships or returning from the armed services are "just doing the best they can" in the matter of hospital appointments. And in the smaller towns, osteopathic and "private" hospitals are filled to capacity.

A talk with Acting Dean Robert A. Moore of our medical school (Washington University, St. Louis) very easily convinced me that to expect any of our Class A Medical Schools to enlarge significantly its enrolment and retain its present high quality of education would be utterly impossible, because of limitations of facilities and staff. Medical education is largely at the graduate level. The most effective teaching exercises are conferences, seminars, and demonstrations to small groups of students. Beyond a certain point, quality and quantity bear an inverse relation to one another.

I speak only for myself, as one of the scribes, not as one having authority. I am but a "part time instructor without stipend." But I believe that there are a few excellent colleges and universities which, with adequate funds, could have equally good medical schools and hospitals added to them. For reasons too numerous to mention here, and agreed to by medical educators, these schools should be built on or near the college or university campuses.

Certain universities which, like that of Missouri, offer the two preclinical years, should be enabled to provide the last two.

How? If private resources are not available, which evidently they are not, there is no better cause to which public funds could be devoted. Priority here in money and material is far more important than that so readily granted for

battle wagons. Wartime help from the Government seems to have done our medical students and schools no harm. If necessary, let us have it in time of peace—with all safeguards as to standards and professional control.

In support of this recommendation, let me quote at some length the opinion of one full time professor in an excellent medical school<sup>1</sup>.

"Congress should provide facilities for direct financial aid to first-class medical schools now existing and for others to be formed, and make such aid provisional to the maintenance of standards to be set by the entire group of medical schools themselves.

"Congress should give direct aid to medical research and not only by setting up new agencies for specific projects but by broad grants to existing institutions. Medical education and research cannot be separated. The total amount spent for medical education and research should be multiplied many times. . . .

"Not only should more hospitals be constructed, but, far more important, support of teaching within those hospitals should be specifically made. Money for the support of resident physicians in many hospitals would often do far more good in improving medical care than direct financial aid to the patients. . . .

"Many more good young physicians would spend five years in hospital training if they could be financially supported and if more teaching hospitals existed."

Dr. Wilson sees the handwriting on the wall. He sees that financially, medical education is in a period of transition. He sees that in the past, and still more so at present, the big private fortunes and foundations, generous as these have been, cannot give adequate support for so expensive (and worth while) an enterprise as medical education and research—expanded as these need to be. Dr. Wilson is chairman of the Academy of Pediatrics's committee now embarked on the study of pediatric education throughout the country. It will be interesting to see whether the findings of that committee will confirm some of the observations made herein.

In conclusion: except for certain faddists and cultists, our people are alert to the immense values of recent developments in medicine. And they are more alert than are we doctors to the fact that proper medical care is not available to many, many of their number. The time for medical educators, in collaboration with government authorities, to take adequate, courageous action, with ultimate saving of lives, is now.

1. (Dr. James L. Wilson; letter to Senator Pepper, published in the *Journal of Pediatrics*, 28: January, 1946, p. 112.)

## **The Borden Award in Medical Sciences**

The Borden Company Foundation, Inc., has established a Borden Award in Medical Sciences to be administered by the Association of American Medical Colleges.

This Award will consist of \$1,000 in cash and a gold medal to be awarded in recognition of outstanding clinical or laboratory research by a member of the faculty of a medical school which is a member of the Association of American Medical Colleges. Five successive awards have been established.

The Award in any year will be made for research which has been published during the preceding three calendar years.

No person may receive more than one Borden Award for the same research, although he may receive a later Award for a different research project.

If two or more persons who have collaborated in a project are selected for an Award, the gold medal and check shall be presented to the group, and bronze replicas of the medal presented to each of the collaborators.

The Association may refrain from making an Award in any year in case no person reports research of the quality deserving an Award.

Only one Award shall be made during any one year.

### **REGULATIONS REGARDING NOMINATIONS**

1. Nominations may be made by any member of the faculty of a medical school which is a member of the Association of American Medical Colleges.

2. Five copies of each nomination should be forwarded to the Secretary of the Association together with five sets of reprints bearing on the investigation for which the nomination is made. The reprints will be returned if requested.

3. Nominations must be based on work published during the preceding three years by members of the faculties of the medical schools in the United States and Canada which are members of the Association.

4. The nomination should contain the academic and scientific history of the candidate and a reasoned statement of the basis for the nomination.

5. A nominee who fails to receive the Award may be nominated for the Award for the same work in a subsequent year. Nominations made for one year



will not be carried over to a succeeding year but must be renewed if the candidate's work is to be considered during the succeeding year.

6. Nominations must be completed and in the hands of the committee before March 1, 1947.

Nominations should be sent to: Dr. Fred C. Zapffe, Secretary, Association of American Medical Colleges, Five South Wabash Avenue, Chicago 3, Illinois.

**THE COMMITTEE FOR THE  
BORDEN AWARD IN MEDICAL SCIENCES.**

Edw. A. Doisy, Chairman, St. Louis University.  
Jas. McNaught, University of Colorado.  
John Youmans, University of Illinois.  
Brian Blades, George Washington University.  
Chas. Best, University of Toronto.

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*The Edgewater Park Meeting*

The result of the experiment of holding the annual meeting in a resort place rather than in a college town was an outstanding success. All present agreed that the experiment should be repeated next year. The attendance was much larger than usual, almost double that of previous years. Although only one Canadian school was represented, all but one of the schools in the United States was represented by one or more delegates, bringing the total registration to well over 200. In addition, nearly 50 ladies gave a pleasurable touch to the meeting.

Edgewater Park is an ideal meeting place. The hotel is an architectural masterpiece placed in a charming setting among stately pines and facing the Gulf of Mexico. It gave complete service. The management and staff were on their toes all the time and made a fine contribution to the success of the meeting. There is only unstinted praise of the service given.

The program was received with acclamation. Since there was nothing to do except to attend the sessions, the attendance was always good. The consensus was that this was "the best meeting ever." Greater praise cannot be given.

## OFFICERS FOR 1946-1947

Dr. Wm. S. McElroy, dean University of Pittsburgh School of Medicine, president-elect, took over the presidency. Dr. Walter A. Bloedorn, dean George Washington University School of Medicine, became president-elect. Dr. Maxwell E. Lapham, dean Tulane University of Louisiana School of Medicine, was elected vice president. Dr. Fred C. Zapffe and Dr. A. C. Bachmeyer were re-elected secretary and treasurer, respectively. Dr. Joseph C. Hinsey, dean Cornell University School of Medicine, and

Dr. W. C. Davison, dean Duke University School of Medicine, were elected members of the Executive Council for a two-year term. Other members of the Executive Council are: Dr. E. M. MacEwen, dean State University of Iowa College of Medicine, chairman; Dr. L. R. Chandler, dean Stanford University School of Medicine; the past president, John Walker Moore, dean University of Louisville School of Medicine; the president, the president-elect and the vice president. The secretary and the treasurer are ex-officio members.

## REPORTS OF COMMITTEES

The reports presented by the various committees reporting commanded the undivided attention and full approbation of all the delegates. The report made by the Committee on the Preparation for War (by medical schools) was an excellent and thoughtful study of what medical schools can and would like to do in the event of another war. The committee consisted of Dr. Stockton Kimball, dean University of Buffalo School of Medicine; Dr. George Packer Berry, assistant dean, University of Rochester School of Medicine, and Dr. Dayton Edwards, assistant dean, Cornell University Medical College. The report will be published in this JOURNAL and will also be mimeographed and sent to every member college.

The Committee on Evaluation of Psychometric Tests, under the chairmanship of Dr. Carlyle F. Jacobsen, dean of the Graduate School of the State University of Iowa, presented a very comprehensive report. The committee was authorized to proceed with the formulation of an acceptable test to replace the medical aptitude test which was abandoned in August. The committee plans to give a test some time in January, 1947, prob-

ably with the help of the Graduate Record Examination group. Timely notice will be given later as to details.

The Committee on Internships and Residencies, of which Dr. Jean A. Curran, dean Long Island College of Medicine, is chairman, presented a report of great import, one which should go far to bring order out of chaos so far as the internship situation is concerned. Hospitals and medical schools will receive copies of the report in the near future.

The committee was authorized to revise the pamphlet titled "Internships," issued in 1939. Dr. Dayton Edwards of Cornell University Medical College, is chairman of the revision subcommittee.

#### REVISION OF CONSTITUTION AND BY-LAWS

The report of this committee had been sent to the member colleges thirty days before the time of holding the annual meeting. Lacking sufficient comment on this report from the members, the Executive Council and the committee agreed that it would be advisable to postpone action on the report until the next annual meeting and that member colleges be urged to send their comments on the report to the secretary of the Association at an early date. The committee and the Executive Council will consider these comments in the preparation of the final report.

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#### *Student Testing Program*

The Committee on Medical Aptitude Test of the Association of American Medical Colleges has been discontinued since August 31, 1946, and will not therefore conduct any further tests for this Association.

The testing program has been transferred from the former committee to another committee of which Dr. Carlyle F. Jacobsen, Dean of the Graduate

School of the State University of Iowa, Iowa City, Iowa, is the chairman. All communications regarding the new test and testing program should be addressed to Doctor Jacobsen. His committee is planning to hold a new form of test some time early in January and it is urged that all students who plan to seek admission to a medical school in the Fall of 1947 should take this test. Further details as to time and place of holding the test will be available shortly.

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#### *Jacob Gimbel Lectures on Sex Psychology*

By bequest of the late Jacob Gimbel, a series of lectures known as the Jacob Gimbel Lectures on Sex Psychology has been established in California to be administered jointly by the University of California and Stanford University Schools of Medicine. The Gimbel lectures consist of a series of five lectures on the general subject of sex psychology or on such topics within the scope of this title as seems appropriate, the lectures to be open and free to the public and to the medical profession.

The first series of Gimbel lectures will be given in San Francisco from November 4 to 8, inclusive. Dr. Margaret Mead of the American Museum of Natural History, New York, has been selected as the first lecturer. Dr. Mead also will lecture at the University of California campus at Berkeley, and Stanford campus near Palo Alto. Dr. Margaret Mead is a nationally known anthropologist and has been associated with the American Museum of Natural History in New York for several years. She is a well known authoress in the field of oceanic ethnology and relationship between psychology and culture. Two of her well known books are "Coming of Age in Samoa" and "Keep Your Powder Dry."

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## College News

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### *University of Colorado School of Medicine*

New additions to the full time teaching faculty: Dr. Ernst Scharrer, associate professor of anatomy; Dr. Wm. Clapper, assistant professor of bacteriology; Dr. Florian A. Cajori, assistant professor of biochemistry; Dr. Harold Dinken, assistant professor of medicine and head of the division of physical medicine; Dr. Harry H. Gordon, professor of pediatrics; Dr. Paul E. Repass, assistant professor of radiology; Dr. Henry Swan, assistant professor of surgery. New additions to the teaching staff in the department of psychiatry are Dr. C. Hirschberg, Dr. S. K. Bush and Mr. Samuel S. Dubin, consulting psychologist.

With the closer affiliation of the Child Research Council as the department for the study of human growth in the medical school eight more members are added to the full time teaching faculty: Dr. Alfred H. Washburn, research professor of pediatrics and head of the department for the study of human growth; Dr. Arnold H. Hilden, associate professor of psychological growth; Dr. Edith Boyd, assistant professor of physical growth; Dr. Marion Maresh, assistant professor of physical growth; Dr. Alberta Iliff, instructor in physiological growth; Dr. Joseph I. Mosberger, instructor in child pathology; Dr. Virginia Trevorow, instructor in physiological growth; Dr. Jean Deming, assistant professor of physical growth.

Dr. James J. Waring, professor of medicine and director of the division of industrial hygiene, is a charter member of the newly organized Academy of Occupational Medicine. The purpose of the organization is to improve the health of the industrial workers, with improvement in occupational efficiency as a corollary.

At the request of the American College of Physicians a course in psychoso-

matic medicine was scheduled here for the week of September 23rd. The course was under the directorship of Dr. Franklin G. Ebaugh, assisted by members of the department of psychiatry, the department of medicine, and the departments of surgery and urology. Special lectures on psychotherapy were given by Dr. O. Spurgeon English, F.A.C.P., visiting professor of psychiatry from Temple University, Philadelphia. Nineteen members of the American College of Physicians enrolled for the course which was given mainly in the form of seminars based upon clinical examination of selected patients from the medical wards and the outpatient clinics of the Colorado General Hospital.

The anatomy, biochemistry and pathology departments have established student teaching fellowships which allow capable students to be added to their teaching staffs for assistance with laboratory instruction. This program will require the student to spend six years in the completion of the medical courses. During two of the six years the students will divide their time between the regular medical school classes and assisting with laboratory teaching. The appointees at the present time are: James E. Roberts, Benjamin E. Robinson, anatomy; Dwain D. Hagerman, Dorsey E. Holtkamp, biochemistry; Kenneth C. Francis, Robert V. Elliott, pathology.

Research projects: Dr. Ernst Scharrer, associate professor of anatomy, will continue his researches on the cytology and functional significance of secreting nerve cells in various vertebrate animals. He is also studying the significance of the vascular patterns in relation to the selective vulnerability of nervous centers to various disease processes. The relationships between vascularity, density of mitochondria and cholinesterase is being investigated.

Dr. Berta Scharrer, research instructor in anatomy, will continue her studies

on experimentally induced tumors found developing in insects after severance of a nerve in organs supplied by the sectioned nerve. The role of the neuro-endocrine intercerebralis-cardiacum-allatum system in development and reproductive activity is being studied also. This research is supported by the Anna Fuller Fund.

The Child Research Council and department for the study of human growth received a grant of \$30,000 for a period of five years from the Nutrition Foundation, N. Y. This grant will be received at the rate of \$6,000 a year and will be used to further the studies on the nutritional status of children which is part of the research program of continuous studies on about a hundred individuals from birth to maturity.

The industrial hygiene division of the department of medicine has received one grant of \$10,000, anonymously given, and \$38,000 from the National Institute of Health. The first grant will be used to increase the facilities of the department for research in the field of occupational medicine. The second grant is to be used in promoting research in heavy metal poisoning.

Other research grants which have been received from the National Institute of Health are funds amounting to \$5,000 to Dr. Henry Swan, assistant professor of surgery, for investigations on the pathological physiology and surgical therapy of mitral stenosis and a grant to Dr. Richard Thompson of \$5,000 for research in the department of bacteriology on antibody production in eyes.

The Life Insurance Medical Research Fund has granted financial help for the tabulation of data obtained from a study of rheumatic fever and rheumatic heart disease among children residing in Colorado areas over 9,000 feet in altitude. The same fund has also granted a student fellowship to Donn Smith, graduate student in the department of physiology and pharmacology for studies on respiration in relation to cardiovascular events.

A \$2,000 grant from the Lederle Laboratories, Inc., has been received by

Dr. Lloyd Florio, professor of public health and laboratory diagnosis for further studies on Colorado tick fever.

Ciba Pharmaceutical Products, Inc., have granted \$3,000 to Dr. Bernard B. Longwell, associate professor of biochemistry, in collaboration with Dr. Frank Gassner, research professor of pathology of Colorado College of Arts and Mechanics, to further their studies on bovine nymphomania.

Dr. Richard Whitehead and Dr. Wm. Draper announce the receipt of \$5,600 as a grant from the Office of Naval Research, U.S.N., for studies in diffusion respiration in the department of physiology and pharmacology.

A recent grant from the Mead Johnson Company to the department of pediatrics is for research on the metabolism of premature infants under the direction of Dr. Harry Gordon, professor of pediatrics.

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#### *Medical College of Alabama*

With a view of creating a center of medical activities, the Medical College has acquired by purchase and gift three blocks of downtown property, adjacent to the block on which is located the Jefferson-Hillman Hospital, which is the teaching hospital of the school. These three blocks have been allocated to certain other institutions that are prepared to build as affiliated units. These activities include the University of Alabama Center of Adult Education, the Crippled Childrens Hospital, the Jefferson County Public Health Building and the Veterans Hospital.

The Medical College of Alabama was established by unanimous vote of the 1943 Alabama legislature by a bill which appropriated \$1,000,000 for building and \$366,750 annually for maintenance and operation. After careful study the Medical College was located in Birmingham because this city offered many essential features, the most important being the presence of two large adjoining hospitals, the Jefferson and Hillman, and the presence of a large clinical fac-



ulty. The hospitals are now owned by the University of Alabama. The new medical school will consist of two wings to be built on the sixteen floor Jefferson Hospital. These wings will house the Medical College and a Dental College which has received recently a \$300,000 allocation for building from the State of Alabama.

The Crippled Childrens Hospital, formerly the Crippled Childrens Clinic, is a nonprofit organization of Alabama citizens who for many years have offered orthopedic services to the indigent crippled children in the state. The staff of that institution is the same as the Department of Orthopedic Surgery in the Medical College. This organization has raised one million dollars with which to build this hospital and has purchased a block of property for this purpose. It will remain as an independent unit governed by its own Board of Directors with the Medical School exercising professional control and teaching privileges in the institution.

The Jefferson County Public Health Building has been allocated approximately one-half block of medical center land for the construction of a \$600,000 building, funds for which have been allocated by joint action of the state, county and city governments. The Medical College will be closely affiliated with this organization since the director of that activity is the chairman of the Department of Public Health in the Medical College.

The University of Alabama Adult Education Center, which will house the University adult education program, will be built in the Medical Center with the first unit expected to be in construction late in 1946. This activity will house classrooms and laboratories that will be utilized by the School of Nursing and other auxiliary medical personnel.

The Veterans Hospital will occupy one entire block in the Center. This will be a five hundred bed institution, to be erected at a cost of approximately \$8,000,000. The block of land for this institu-

tion has been purchased from the University of Alabama.

The University Cancer Hospital is a proposed building for the Medical Center. Plans are being made for its establishment and for the allocation of land for the building.

In addition to the four blocks described above, the University has purchased an additional one-half block of apartment house structures which has been remodeled at a total cost of \$350,000 and serves as student dormitories, with some facilities for married faculty members and other medical personnel.

Dr. Charles H. Winkler has been appointed assistant professor of bacteriology and clinical pathology. Dr. Harwell Davis, Jr., has been granted a fellowship in pathology from the Life Insurance Medical Research Fund to do research in atherosclerosis under the direction of Dr. Roger D. Baker, professor and chief of the Department of Pathology.

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#### *New York Medical College*

Dr. James Macfarlane Winfield, formerly a member of the faculty of Wayne University College of Medicine, has been appointed professor of surgery, attending surgeon and educational director of the Department of Surgery and attending surgeon at the Metropolitan Hospital, which is affiliated with the college. In each of the hospitals affiliated with the college Dr. Winfield will have as deputies the following physicians who will assist Dr. Winfield with the daily supervision and direction of the teaching program in those institutions: Dr. Walter Mersheimer, assistant professor of surgery, who will be assigned at the Metropolitan Hospital; Dr. Allen S. Graham, instructor in surgery, who will be assigned to the Flower and Fifth Avenue Hospitals, and Dr. Nicholas Tescione, assistant clinical professor, assigned to the Queens General Hospital. The assignment to the City Hospital has not yet been made.

Dr. Claude M. McFall, who has been head of the anatomy department at

George Washington University since 1939, has been appointed visiting professor of anatomy for the current academic year.

**New Appointments:** Dr. Preston Wade, clinical professor of surgery; Dr. James Kidder and Dr. Wilfred F. Ruggiero, associate clinical professor of surgery, Dr. E. Lawrence House, assistant professor of anatomy.

**Promotions:** Roger C. Gay, assistant dean; Dr. James W. Benjamin, professor of anatomy and assistant to the dean; Dr. Lois C. Lillick, associate professor of bacteriology and active director of the department; Dr. Francis D. Speer, associate professor of clinical pathology and director of the laboratory; Dr. Lawrence B. Slobody, associate professor in pediatrics and associate attending pediatrician; Dr. Charles A. Turtz, associate professor of ophthalmology and associate attending ophthalmologist; Dr. Herman Robbins, assistant professor of pediatrics and assistant attending pediatrician; Dr. Jerome G. Kaufman, assistant professor of medicine and assistant attending physician; Dr. Samuel L. Saltzman, assistant clinical professor of ophthalmology and assistant attending ophthalmologist.

During the latter half of the fiscal year just ended, the college received bequests totaling over \$150,000 from the Ida Eno Carner Estate, Hattie Hill Estate for the American Criterion Society Fund, Susan E. Urie Estate, Caroline Catherine Cary Estate, and Louise W. Hackney Estate. Research grants from all sources received during the spring and summer total \$129,607. Among the principal contributors to the research program were the United States Army, Quartermaster-General Corps, John and Mary Markle Foundation, the Josiah Macy Jr. Foundation, Ernest Bischoff Company, Parke, Davis & Co. and the Schering Corporation.

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#### *State University of Iowa College of Medicine*

The Iowa State Board of Education has approved of a two year experimental plan for compensation. The plan was

recommended by a faculty committee. A salary schedule was adopted for the various ranks. Private clinical practice was authorized with percentage limits based on individual salaries. Fees from private patients will be credited to the clinical department rendering the service. From this income, the faculty members will be paid the additional stipulated percentage of their basic salaries. Funds remaining will be used for departmental equipment and scientific programs. Professors desiring to serve on a full time basis will be permitted to do so. The plan will be in force July 1, 1947. It will be reviewed after a two year trial. A plan for retirement compensation will be included in the program.

Dr. H. Russell Meyers has been appointed assistant professor of neurosurgery.

Dr. Gerhard Hartman has been appointed Administrator of the University Hospitals and professor of Hospital Administration. He succeeds Robert E. Neff, who resigned last year.

Dr. Walter L. Biering, Iowa State Commissioner of Health, has been given the title of professor emeritus of theory and practice of medicine. Dr. Biering was head of the department of internal medicine from 1903 to 1910. He was head of the department of bacteriology and pathology from 1893 to 1903.

Dr. G. C. Knowlton, assistant professor of physiology, has resigned to join the faculty of Emory University School of Medicine.

Dr. Philip C. Jeans, professor and head of the pediatrics department and Dr. Genevieve Stearns, research professor of pediatrics, were granted the Borden Award by the American Institute of Nutrition in recognition of their contributions on the nutritive significance of milk and various components of milk in the maintenance of infant and child health. The award consists of a gold medal and \$1,000.

Dr. Wm. C. Klettel, Jr., was promoted to assistant professor of obstetrics and gynecology and Dr. Wm. D. Collings to assistant professor of physiology.

*Wayne University  
College of Medicine*

Dean Hardy A Kemp has been appointed expert consultant in tropical diseases to the Secretary of War.

Grants received: \$20,000 to the department of physiology, for the investigation and study of blood clotting; \$9,632 for the continuation of investigations in penicillin therapy; and \$3,000 for the study of virus and potential virus diseases. The Upjohn Company donated a sum of \$3,200 for the continuation of a study of cardiac patients; \$4,000 from Parke, Davis and Company for research in physiology.

Dr. John D. Green of the faculty of the University of Cambridge, England, is in Detroit as recipient of the Alexander Blain Hospital Fellowship in Anatomy for 1946-1947. Research in the fields of neurology and neural anatomy will be directed by Dr. Green for one year under the terms of the fellowship.

Tentative recommendations for state control of Wayne University were approved by a joint legislative committee during its fourth meeting recently to investigate the advisability of transferring the university to the state. The committee also secured informal approval of the recommendations by a majority of the Detroit Board of Education. The committee will make its final report at the first meeting of the State Legislature in January, 1947. Certain basic recommendations have already been agreed upon, including the method of transfer; the control body and its selection; the official name; and the disposition of the present staff and the property of the university.

The state may acquire through legislative act and then would set up a board of control, composed of eight members to be appointed by the governor and confirmed by the senate. Members would serve for eight-year terms, staggered so that two members would be appointed every two years. Members of the board would serve without compensation and would be reimbursed for reasonable necessary expenses. The uni-

versity would be designated as "Wayne State University of Michigan."

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*University of Tennessee  
College of Medicine*

Hugo M. Krueger, Ph.D., associate professor of pharmacology, has been appointed director of the department of pharmacology at the College of Medicine at the American University of Beirut, Syria. The departments of physiology and pharmacology have been combined in a single division under the direction of John P. Quigley, Ph.D., professor and chief of the division of pharmacology. The two departments will be maintained separately.

New Appointments: Dr. R. V. Brown, formerly of the University of North Dakota, as Associate Professor of Pharmacology; Dr. James H. Wills, formerly of the University of Rochester, as assistant professor of pharmacology; Dr. C. Riley Houck, formerly of New York University, as assistant professor of physiology; Dr. Lester Van Middlesworth, formerly of the University of California, as instructor in physiology. Dr. D. Roy McCullagh, Dr. Paul Mesaros and Dr. Daniel A. Brody are research associates in the department of pharmacology.

The Schering Corporation of Bloomfield, New Jersey, has provided funds for the establishment of a Schering Fellowship in the department of pharmacology.

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*Yale University  
School of Medicine*

Dr. Stanhope Bayne-Jones has been released from service and has returned to Yale as professor of bacteriology and director of the Jane Coffin Child Memorial Fund for Medical Research. During his service with the Army, Dr. Bayne-Jones was deputy director of the preventive medicine service.

The establishment at Yale of an Institute of Occupational Medicine and Hygiene for work in the field of industrial medicine is announced. The Insti-

tute will be headed by Dr. Ronald F. Buchan, newly appointed assistant professor of industrial medicine, who will serve as clinical director of the institute.

The primary aims of the institute are:

1. The training of medical students and industrial physicians, based on the belief that occupational medicine and hygiene is now a specialty.

2. Special graduate instruction, together with the opportunity for research in the field of occupational medicine and hygiene which will be available to graduate students in medicine, nursing, public health and engineering.

3. Research in occupational medicine and hygiene, in the belief that the maintenance of active research in such an important field is of teaching value to the intelligent student.

4. Consultation. The institute will be designed to assist industrial concerns on certain practical questions in the same fashion as the clinicians in the School of Medicine assist their colleagues in the practice of medicine with regard to medical, surgical, or public health problems.

The program will be supervised by a special committee composed of the following members of the Yale faculty: Dean Blake, serving ex officio; Dr. William T. Salter, professor of pharmacology; Dr. George M. Smith, research associate in anatomy; Dr. Ira V. Hiscock, professor of public health, and Dr. John R. Paul, professor of preventive medicine, chairman.

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#### *University of Texas Medical Branch*

A new course dealing with the applications of physics to physiology and medicine has been inaugurated under the auspices of the Departments of Physiology and Radiology. The new course is designed as an orientation course for first year students and will be given once weekly during the first semester.

Carl J. Wiggers, M.D., professor of physiology, Western Reserve University Medical School, has been appointed Special Lecturer in Physiology for a series

of lectures to the staff and medical students during the fall semester in 1946. In addition to the special lectures arranged, Doctor Wiggers will hold seminars on circulation in health and disease. R. M. Brucer, M.D., formerly Lieutenant Colonel in the Medical Corps of the Airborne Troop Service, has been appointed instructor in physiology. Doctor Brucer will carry forward research work associated with aviation physiology. Howard G. Swann, Ph.D., assistant professor of physiology, has received a grant of \$10,000 from the Army Research Program for studies on aviation physiology. The grant is for the purpose of assisting in the continuance of studies undertaken by Doctor Swann while at Wright Field.

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#### *Western Reserve University School of Medicine*

A new curriculum revision was put into effect with the opening of the term in September. The curriculum has been modified to place increasing emphasis on actual work with patients and less on didactic lectures. Acceleration has been discontinued, facilities will be provided for elective work in laboratory or clinic during the summer vacation. A new system of faculty advisers has been instituted to provide more personal contact between students and instructors. The Student Council, which was not active during the war, has been reorganized to coordinate student opinions about school affairs.

Dr. Louis J. Karnosh, associate clinical professor of neurology, has been appointed full professor. Dr. Enrique E. Ecker, professor of immunology, left for Europe to deliver eleven lectures on various phases of immunology and bacteriology.

A grant of \$17,200 was received from the United States Navy to the department of biochemistry for the study of the metabolism of bacteria. The grant will support the first year's work in a three year program to be conducted by Drs. Harland G. Wood, head of the department, and Drs. Lester O. Krampitz and

Merton F. Utter, associate professors of biochemistry, using bacteria as experimental organisms to throw more light on living processes in humans. The research also will be directed toward a clearer understanding of the action of antibiotics such as penicillin, antiseptics and other chemicals on bacteria, with a view toward increasing their effectiveness.

The department of biochemistry recently received a grant of \$13,800 from the American Cancer Society for a research project using "tracer elements" in the study of fundamental processes of life.

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*New York University  
College of Medicine*

Dr. Howard A. Rusk, wartime Chief of the Army Air Forces Convalescent Services Program, has been named to head a new Department of Rehabilitation and Physical Medicine. The department will be the first of its kind in any medical college in the world, and will train all students through their medical college years in what is termed the "third phase of medical care"—preparing the patient to go from the bed to the job. The department is an outgrowth and expansion of a division of physical medicine set up early last year as a part of the Department of Medicine under a grant of \$250,000 from the Baruch Committee on Physical Medicine in 1944. Dr. George G. Deaver, clinical professor of physical medicine, is to continue as head of the physical medicine division of the new department.

Dr. Eric Ogden, professor of physiology, University of Texas Medical Branch, will give a series of lectures on the cardiovascular system. The series will begin Wednesday, November 6, with a lecture on "Experimental Hypertension and Its Extrarenal Sequel." The subject for November 13 will be "The Function of the Cardiovascular System and Its Regulation." His final lecture, "Cardiovascular Integration by Endocrine and Nervous Mechanisms," is scheduled for November 20. All lectures

will be held at 4:00 P. M. in the Main Lecture Hall of the College, 477 First Avenue.

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*Washington University  
School of Medicine*

Dr. Edgar A. Blair, assistant professor of physiology, has accepted a position as a civilian in the Armored Research Laboratory at Fort Knox, Ky. Surgeon General Norman T. Kirk has asked the School of Medicine to re-establish a unit of the Officers Reserve Training Corps. The ROTC unit will begin this fall under the direction of Capt. Richard Yore. Dr. Everts A. Graham, head of the Department of Surgery, represented surgery at the one hundredth anniversary celebration of Dr. Morton's use of ether, to be held at the Massachusetts General Hospital and the Harvard Medical School October 14-16, 1946. Dr. Gustave J. Dammin has been appointed assistant professor of internal medicine and assistant professor of pathology. He will serve as director of the Central Diagnostic Laboratories at Barnes Hospital and will aid in the teaching of laboratory diagnosis in the Department of Medicine. The other half of his time will be devoted to research and teaching in the Department of Pathology. In pathology, he will work particularly in the field of clinical pathology.

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*Northwestern University  
Medical School*

Dr. Smith Freeman has resigned as professor of physiology to become head of the biochemical section of the Mayo Clinic, Rochester, Minn., and professor on the graduate faculty of the University of Minnesota. Wendell J. S. Krieg, Ph.D., associate professor of neurology at Northwestern, has been appointed director of the Institute of Neurology and professor of neurology, to succeed William F. Windle, Ph.D. Dr. William B. Wartman, assistant professor of pathology, Western Reserve University School of Medicine, has been appointed professor of pathology and chairman of the department. He succeeds Dr. James



P. Simonds, who has retired with the rank of professor of pathology emeritus. Dr. Thomas C. Laipply, assistant professor of pathology, Western Reserve University School of Medicine, has been appointed associate professor of pathology at the medical school. Dr. John S. Gray, professor of physiology, has been appointed chairman of the department, to succeed Dr. Andrew C. Ivy.

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*University of Oregon  
Medical School*

William F. Allen, Ph.D., for 30 years professor and head of the department of anatomy, has retired.

The department of pharmacology has recently received two grants for research. The Sandoz Chemical Works, Inc., New York, has provided an unrestricted grant of \$2,000 for general research and for completion of studies on oxytocic and antiepileptic drugs, to be directed by Dr. Norman A. David, professor of pharmacology and head of the department, assisted by Dr. Anton C. Kirchhof and Nilkanth M. Phatak, Ph.D. The second grant of \$5,000 is to be used jointly by the departments of pharmacology and otolaryngology and has been awarded by the Research Study Club and the Pacific Coast Otolaryngological Society, Los Angeles, for the purpose of investigating the effect of hormonal substances on the growth and development of the middle ear and to study the general problem of otosclerosis. This study will be under the supervision of Dr. Guy L. Boyden, professor of otolaryngology and Dr. Ben Vidgoff, research associate in pharmacology.

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*University of Maryland  
School of Medicine*

Dr. Harry K. Iwamoto was appointed assistant professor of pharmacology October 1, 1946. He is taking the place of Dr. William E. Evans, Jr., associate professor, who died a few months ago.

The Ohio Chemical and Manufacturing Company of Cleveland, Ohio, has awarded a \$5,000 fellowship to the De-

partment of Pharmacology for the purpose of studying anesthetic agents. These grants have been in effect since 1938. Dorothy V. Kibler, M.S., is working on the problem under the direction of Dr. John C. Krantz, Jr., professor of pharmacology.

The Emerson Drug Company of Baltimore has awarded a \$5,000 fellowship to the Department of Pharmacology for the purpose of studying the mechanism of action of drugs in hypertension. Elaine Gaby, A.B., is working on the problem under the direction of Dr. John C. Krantz, Jr., professor of pharmacology.

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*George Washington University  
School of Medicine*

Appointments: Brian Blades, professor of surgery and executive head of the department; Paul K. Smith, Ph.D., professor of pharmacology and executive head of the department; Lloyd H. Housel, clinical professor of anesthesiology; Vincent Michael Iovine and Thomas McPherson Brown, M.D. adjunct clinical professor of medicine; George Porter Robb and Monroe J. Romansky, associate clinical professor of medicine; Wallace H. Graham, professorial lecturer in surgery; Clark Henry Yeager, professorial lecturer in tropical medicine; Webb Edward Haymaker, professorial lecturer in anatomy; Carleton R. Treadwell, assistant professor of biochemistry; William T. Gibb, assistant clinical professor of medicine; William Stanley McCune, assistant clinical professor of surgery.

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*Stanford University  
School of Medicine*

Professors emeritus: Dr. Thomas Addis, professor of medicine at Stanford since 1911, became emeritus on August 31, 1946. Dr. Addis is nationally known for his investigations in nephritis and kidney function. Dr. Leo Eloesser, clinical professor of surgery since 1913, became emeritus on August 31, 1946. Dr. Eloesser is nationally known for his pio-

neering in the field of intrathoracic surgery. Dr. Eloesser has been in China for the past year with UNRRA, but is expected to return to the United States early in 1947.

**Gifts:** During the academic year just closed Stanford Medical School received \$726,990 in gifts. Of this, \$187,800 is for specific use in the Medical school for research, loan funds, fellowships and free beds in the hospital, with \$539,190 from the Frances Coffin Edwards Estate for a new Medical Science Building.

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#### *University of Wisconsin Medical School*

Dr. Sture A. M. Johnson, formerly of New York, has been appointed professor of dermatology and syphilology and head of the department. He succeeds Dr. Otto H. Foerster, who retired with the rank of emeritus professor.

Dr. Carol M. Rice has been appointed associate professor of clinical medicine and assistant director of Student Health Service.

Dr. C. Knight Aldrich has been appointed assistant professor of neuropsychiatry in the department of student health. Dr. John Welch Brown has been appointed director of student health as well as professor of preventive medicine. Dr. Harold Rusch has been appointed director of the McArdle Memorial Laboratory for Cancer Research.

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#### *Long Island College of Medicine*

The college received a grant of \$5,000 from the American Cancer Society for a study of the steroid substances, including male and female hormones. Dr. James B. Hamilton, head of the department of anatomy, will direct the program, assisted by Dr. George H. Paff, associate professor of anatomy. Part of the work will be conducted at the Memorial Hospital under the supervision of Dr. Cornelius P. Rhodes, director of the hospital.

A teaching affiliation has been established between the Jewish Hospital of

Brooklyn and the College of Medicine. This alliance will provide senior students with a wider opportunity for intensive study in fields of particular interest to them. Students will be offered the choice of elective clerkships in any of five fields of medicine, surgery, obstetrics, pediatrics and pathology. The extensive facilities of the Jewish Hospital with its 660 beds will be utilized for the instruction of students who elect a one or two month clerkship.

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#### *University of Illinois College of Medicine*

Dr. John B. Youmans, professor of medicine in Vanderbilt University School of Medicine, has been appointed dean, succeeding Dr. Raymond B. Allen, now president of the University of Washington. Dr. Frederick C. Lendrum, assistant professor of medicine, has been appointed director of the reorganized and expanded health service at the university's professional colleges in Chicago. Dr. Lendrum succeeds Dr. Edward Hurtado, who has resigned to return to private practice. Functions of the Health Service fall into three categories: (1) Medical attention for on-the-job injuries of faculty and staff, (2) Examination of new students and employees, (3) Examinations legally required in connection with sick benefits and the university's retirement system.

\* \*

#### *University of Minnesota Medical School*

Teaching and research in physiological chemistry in the University of Minnesota Medical School has recently been organized as a separate department. Work in this field was formerly administered as a division of the Department of Physiology. Dr. Wallace D. Armstrong has been named head of the department.

New appointments to the staff of the department include Dr. David Glick, associate professor; Dr. Elizabeth Frame and Dr. Saul Cohen, assistant professors. Other members of the department are

Drs. C. P. Barnum, Karl Sollner and Walter O. Lundberg, associate professors; and Dr. Charles Carr, instructor.

A research grant of \$10,000 a year for three years has been made available to the department of medicine by the U. S. Public Health Service for studies on brucellosis. This research project is under the direction of Dr. Wesley W. Spink, professor of medicine. Associated with him are Drs. Wendell H. Hall, Hartford, Conn., and Abraham I. Braude, Chicago. Investigations are under way in an attempt to clarify the pathogenesis of brucellosis in human beings and a clinical and experimental evaluation of therapeutic agents. In addition, epidemiologic studies are being extended.

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#### *Woman's Medical College*

Faculty Retirements: Dr. Faith S. Fetterman, professor of urology; Dr. John S. Rodman, professor of surgery; Dr. Margaret S. Sturgis, professor of gynecology.

New Appointments: Dr. L. K. Ferguson, professor of surgery; Dr. Joseph Hughes, professor of psychiatry; Dr. Mary D. Pettit, professor of gynecology; Dr. Frieda L. Mayer, assistant professor of physiological chemistry; Dr. William H. Erb, clinical professor of surgery; Dr. Harold L. Israel, clinical associate professor of medicine; Dr. William Brody, Dr. A. Henry A. Claggett, Jr., and Dr. Christopher C. Shaw, clinical assistant professor of medicine, and Dr. Lloyd W. Stevens, assistant clinical professor of surgery.

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#### *University of Nebraska College of Medicine*

On September 20 the C. W. M. Poynter Foundation inaugurated its first lectureship with talks by Dr. Joseph S. D'Antoni, associate professor of tropical medicine, Tulane University of Louisiana School of Medicine, New Orleans, on "Clinical Parasitology" and "Public Health Aspects of Parasitology." Reuben G. Gustavson, Ph.D., chancellor of

the University of Nebraska, also spoke on "The Place of the Medical School in the Middle West." The Poynter foundation was created in 1944 by alumni and friends of Dr. Charles W. M. Poynter to sponsor a lectureship and fellowship at the college of medicine.

\* \*

#### *Southwestern Medical College*

Dr. Arthur Grollman has been appointed professor and head of the department of pharmacology. He succeeds Dr. Donald Slaughter, now dean of University of South Dakota School of Medicine. Dr. Carleton Treadwell, associate professor of biochemistry, has resigned to join the faculty of George Washington University School of Medicine as assistant professor of biochemistry.

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#### *Temple University School of Medicine*

Dr. Richard A. Kern has been appointed professor and head of the department of medicine. Dr. Kern, who succeeds Dr. Charles L. Brown, recently appointed Dean of the Hahnemann Medical School, comes to Temple from the University of Pennsylvania, where since 1934 he has been professor of clinical medicine and chief of the outpatient department and the allergy section of the University Hospital. He served in the U. S. N. R. during both world wars. He was separated from the Navy last March, after being on active duty for four years. As a consultant to the Veterans Administration, Dr. Kern is chief of its section for general medicine.

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#### *Loyola University School of Medicine*

Rev. Michael J. English, S.J., is the newly appointed regent, succeeding Father Maher. Father English has just returned from service with the Armed Forces. Dr. Italo F. Volini, professor and head of the department of medicine, has been named a member of the school board of the city of Chicago.

*University of Georgia  
School of Medicine*

Members of the faculty through grants received from the U. S. Public Health Service, will be able to carry forward several important research projects. Dr. Robert B. Greenblatt and Robert B. Dienst, Ph.D., were allocated \$5,550 for study of venereal diseases other than syphilis and gonorrhea. Dr. Virgil P. W. Sydenstricker receives \$12,550 for research in internal medicine. An award of \$14,375 was made to Dr. Harvey M. Cleckley for research in psychiatry. A part of the program will deal with electroencephalography.

♦ ♦

*University of Pittsburgh  
School of Medicine*

Dr. William L. Cook, Jr., has been appointed assistant director of the department of industrial hygiene.

♦ ♦

*Georgetown University  
School of Medicine*

Reverend David V. McCauley has retired from the deanship. He will be succeeded by the Reverend D. McNally.

♦ ♦

*Tulane University of Louisiana  
School of Medicine*

A grant of \$35,000 for the purpose of studying the effect of climate on the

circulatory system has been made by the Life Insurance Medical Research Fund. This research work will be directed by Dr. George E. Burch, associate professor of clinical and experimental medicine.

♦ ♦

*Boston University  
School of Medicine*

Dr. Kenneth E. Penrod has been appointed assistant professor of physiology. Dr. Lloyd C. Fogg, associate professor of microscopic anatomy, has been appointed registrar. Dr. Albert H. Hegnauer was appointed associate professor of physiology. Dr. Dwight J. Mulford was named assistant professor of pharmacology.

♦ ♦

*West Virginia School of Medicine*

Robb S. Spray, professor of bacteriology, has retired. His successor is John M. Slack, Ph.D.

♦ ♦

*Medical College of Virginia*

Dr. Wm. R. Bond, Yonkers, N. Y., has been appointed lecturer in physiology and endocrinology.

♦ ♦

*University of Oregon  
Medical School*

Dr. Frank B. Queen has been appointed professor of pathology and director of the state cancer program.

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## General News

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### *Exchange of Students*

Legislation sponsored by Senator Fulbright of Arkansas and approved by the President August 1 authorizes the Department of State to use some of the funds from the sale of surplus property abroad for exchanges of students and other educational activities. Up to \$20,000,000 can be earmarked for educational exchanges with any country which buys surplus property; a maximum of \$1,000,000 can be expended in each year in each country with which the Department of State has entered into an agreement. Such an agreement has already been consummated with Great Britain, which will provide \$20,000,000 from the sale of surplus property for educational exchanges with the United Kingdom and the British colonies. Similar agreements are being negotiated with Australia, New Zealand, China, the Philippines, Burma, India, Iran, Iraq, Saudi Arabia, Turkey, Egypt, Greece, Italy, Austria, France, the Netherlands, Belgium and the Scandinavian countries. The Fulbright plan authorizes these types of educational activities: (1) American students can be given grants of foreign currencies to be used to pay the costs of higher education or research in foreign countries; (2) American professors can be given grants to give lectures in foreign institutions of higher learning; (3) foreign students can be given scholarships to study at American nondenominational institutions abroad, such as the American University at Bierut, Syria, and Robert College at Istanbul, Turkey, and (4) foreign students can be given funds to pay for their transportation to the United States to attend American institutions of higher learning but not to pay expenses within the United States. A Board of Foreign Scholarships will be appointed by the President to select student beneficiaries, the board to include representatives of the Office of Education, the U. S. Vet-

erans Administration, state educational institutions and privately endowed institutions. Preference will be given to veterans of the first and second world wars, and in the selection of American students geographic distribution will be considered. It seems unlikely that any scholarships will be awarded for the 1946-1947 academic year, but the Department of State hopes that grants can be made in the spring of 1947 for the school year convening in the autumn of that year. To what extent the provisions of this new law will be utilized in the field of medicine is not clear at present. Perhaps, when the procedures have been worked out in detail, more definite regulations will become available.

—J.A.M.A.—132:286, 1946.

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### *American Academy of Allergy*

The American Academy of Allergy will hold its annual convention at Hotel Pennsylvania, New York City, November 25-27, inclusive. All physicians interested in allergic problems are cordially invited to attend the sessions as guests of the Academy without payment of registration fee. The program has been arranged to cover a wide variety of conditions where allergic factors may be important. Papers will be presented dealing with the latest methods of diagnosis and treatment as well as the results of investigation and research. Advance copies of the program may be obtained by writing to the Chairman on Arrangements, Dr. Horace S. Baldwin, 136 East 64th Street, New York City, prior to November 10th.

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### *Medical Scholarships in Mississippi*

The Mississippi State Medical Education Board was created by the legislature to receive and pass on loans or scholarships by student residents of the state and who desire to become physi-



cians. The purpose of the loan is to enable an applicant to obtain a medical education which will qualify him or her to practice medicine in the state. An important provision is that the applicant for the loan must have been accepted by an approved medical school. A scholarship recipient, following entrance on medical practice must serve in a community of 5,000 or less for two years before being eligible to pay off the loan, one fifth of which, plus interest, is to be credited to him for each year of practice. Dr. David S. Pancratz, dean of the University of Mississippi School of Medicine, is chairman of the Board.

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#### *Hospital-Medical School Affiliation Offers Opportunities to Residents*

Sixteen Michigan hospitals have affiliated or are in the process of affiliating with a program of medical education at the University of Michigan Medical School, Ann Arbor, to give additional graduate training to resident physicians in hospitals, it was announced October 1. Dr. Charles F. Wilkinson, Jr., assistant professor of internal medicine and program coordinator, said that from twenty-five to thirty doctors who already have completed two years of their resident training were to begin from six to twelve months of study in the basic medical sciences at the medical school, October 7. Affiliating hospitals must have an active teaching program and meet other minimum requirements set by the medical school. Under the decentralized program, doctors spend two years at affiliated hospitals as interns and assistant residents and then rotate to the medical school for advanced study in the basic medical sciences. After six to twelve months of study the doctors return to their original hospitals for at least one additional year as residents in their clinical fields. Funds for the program are provided by the W. K. Kellogg Founda-

tion, which has allotted the medical school \$105,000 for a three year period.

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#### *Life Insurance Medical Research Fund*

Eleven additional fellowships and three grants in aid to medical institutions for medical research in diseases of the heart and arteries have been made, bringing this year's allocation to nearly \$700,000. This fund is supported by 149 legal reserve life insurance companies in the United States and Canada. Applications for research fellowships for 1947 will close January 1, 1947, and for grants in aid on January 31, 1947. The usual value of fellowships is from \$1,500 to \$2,000 a year for junior fellows and from \$2,500 to \$3,500 for seniors.

The fellowship awards bring the total number given by the Fund in the first year of its operation to 20, representing \$55,800. The 20 fellows come from 11 states and 2 Canadian provinces and will engage in medical research at 17 different institutions. Total funds expended for grants-in-aid amount to \$633,591, for a total of 55 research projects.

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#### *Near East College Association*

At a dinner given September 12th in honor of Dr. Allen O. Whipple, who has been appointed Visiting Professor of Surgery and Adviser to the Medical Center of the American University of Beirut, it was announced that gifts totaling \$1,000,000 had been received. Of this amount, \$250,000 has been designated for the Dodge Medical Center, which Dr. Whipple helped to plan.

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#### *Soiland Foundation*

Dr. Albert Soiland, Los Angeles, has turned over \$1,000,000 to endow fellowships in cancer research to this foundation.

## Book News

### *Practical Malariology*

Prepared under the Auspices of the Division of Medical Sciences of the National Research Council. Paul F. Russell, M.D.; Luther S. West, Ph.D., and Reginald D. Manwell, Sc.D. Foreword by Raymond D. Fosdick. W. B. Saunders Company, Philadelphia. 1946. Price, \$8.

This is a very complete, thorough and authoritative dissertation on malaria. The story is told in a most interesting manner and because the authors have had a long and intensive experience with malaria, they know what they are saying about this insidious and far flung disease. Much has been accomplished to control the disease, even to eradicate it in certain countries and areas, but much more needs to be done before it is finally conquered the world over. This book should be in the hands of every physician and he should read it with care and deliberation because it tells a story with which he should be familiar and in which he should be an active participant.

♦ ♦

### *Principles of Hematology*

By Russell L. Hadden, M.D., Chief of the Medical Division of the Cleveland Clinic. Ed. 3. Lea & Febiger, Philadelphia. 1946. Price, \$5.

Completely revised. New part: technic of bone marrow puncture and the discussion of films so obtained. Technical methods for all procedures in hematology are described in detail. The book is a valuable introduction to hematology for students. It is a safe and authoritative guide.

♦ ♦

### *Developmental Anatomy: Textbook and Laboratory Manual of Embryology*

By Leslie B. Arey, Ph.D., Professor of Anatomy, Northwestern University. Ed. 5. W. B. Saunders Company, Philadelphia. 1946. Price, \$7.

Completely revised. New chapters treat of reproductive cycles and their hormonal control and of the fundamental concepts and problems of experimental embryology.

♦ ♦

### *Operative Gynecology*

By Richard W. Te Linde, M.D., Professor of Gynecology, Johns Hopkins University. J. B. Lippincott Company, Philadelphia. 1946.

Very complete; profusely and well illustrated. Should be considered a "must" book for the operating gynecologist.

### *Penicillin: Its Practical Application*

Under the general editorship of Sir Alexander Fleming, M.B., Professor of Bacteriology in the University of London, St. Mary's Hospital. The Blakiston Company, Philadelphia. 1946. Price, \$7.

Authorities in various fields of medicine have joined the author in telling the complete story of penicillin, such as the chemistry, bacteriology, pharmacology and clinical use with results from such use. Dosages, forms and methods of administration, prophylactic uses, control, etc.—in fact, the complete story of penicillin is told.

♦ ♦

### *Dentistry, An Agency of Health Service*

By William Wallace Carr, D.D.S., Director of Oral Surgery, Metropolitan Hospital, New York, etc. The Commonwealth Fund, New York. 1946. Price, \$1.50.

Presents a comprehensive picture of dentistry in the United States with indication of future trends. Outstanding dental authorities have contributed to the book. A panoramic picture of dentistry by experts in this field.

♦ ♦

### *A Textbook of Clinical Neurology*

By J. M. Nielsen, M.D., Associate Clinical Professor of Medicine (Neurology), University of Southern California. Ed. 2. Paul B. Hoeber, Inc., New York. 1946. Price, \$7.50.

Concise; clear, basic anatomy and physiology are interwoven with the clinical discussion where needed to show the rationale of treatment. The whole field of clinical neurology is covered well. A good book for the student as well as the practitioner. Not sufficient attention is paid to neurology now that psychiatry occupies such a prominent place in the physician's mind. And there are so many neurologic cases.

♦ ♦

### *Essentials of Medicine*

By Charles P. Emerson, Jr., M.D., Assistant Professor of Medicine, Boston University School of Medicine, and Jane E. Taylor, R.N., Nursing Education Consultant, U. S. Public Health Service. Ed. 15. J. B. Lippincott Company, Philadelphia. 1946. Price, \$3.50.

Completely revised and rewritten to encompass the many scientific developments of immediate importance in the practice of internal medicine. A good book to have on the desk for ready reference.

**Harvey Cushing: A Biography**

By John F. Fulton, Professor of Physiology, Yale University School of Medicine. Charles C. Thomas, Springfield. 1946. Price, \$5.

The author must be complimented on having produced a most complete and interesting "life" of a great medical man. The book makes most delightful reading.

\* \*

**Handbook of Diet Therapy**

Written and compiled by Dorothea Turner for the American Dietetic Association. The University of Chicago Press, Chicago. 1946. Price, \$2.

Details all about what diets should be and how they can be set up. It is a welcome addition to the literature of applied nutrition.

\* \*

**The Challenge of Polio:  
The Crusade Against Infantile Paralysis**

By Roland H. Berg. Introduction by Basil O'Connor, President of the National Foundation for Infantile Paralysis, Inc. The Dial Press, New York. 1946. Price, \$2.50.

The biography of a disease. What has been done. What remains to be done. Relates the story of the young navy doctor who performs surgical miracles in the operating room, using a common rivet gun borrowed from a shipyard.

\* \*

**The Diagnosis and Treatment of  
Bronchial Asthma**

By Leslie N. Gay, M.D., Assistant Professor of Medicine, Johns Hopkins University School of Medicine. With a foreword by Warfield T. Longcope, M.D., Professor of Medicine, Johns Hopkins University School of Medicine. The Williams & Wilkins Company, Baltimore. 1946. Price, \$5.

Provides a detailed knowledge of the ramifications of bronchial asthma; stresses the value of a thorough history and a comprehensive examination of any patient whose complaint is shortness of breath. Treatment is stressed as well as diagnosis.

\* \*

**A Memoir to the Academy of Sciences at  
Paris on a New Use of Sulphuric Ether**

By W. T. G. Morton of Boston in the U. S. A. Presented by M. Arago in the Autumn of 1847. With a foreword by John F. Fulton. Henry Schuman, New York. 1946. Price, \$1.50.

A most interesting historical document.

\* \*

**The Improvement of Teacher Education**

A final report by the Commission on Teacher Education. American Council on Education, Washington, D. C. 1946. Price, \$2.

**Nutrition and Diet Therapy:  
A Textbook of Dietetics**

By Fairfax T. Proudfit, Instructor in Nutrition and Diet Therapy, University of Tennessee College of Medicine, and Corinne H. Robinson, formerly Instructor in Nutrition and Diet Therapy, Columbia University School of Nursing. Ed. 9. The Macmillan Company, New York. 1946. Price, \$3.75.

\* \*

**Introduction to Clinical Neurology**

By Gordon Holmes, M.D., London. The Williams & Wilkins Company, Baltimore. 1946. Price, \$4.

A good approach to the study of neurology, stressing a knowledge of anatomy and physiology, especially disturbances of function. An excellent book for the medical student.

\* \*

**Quantitative Clinical Chemistry  
Interpretations: Vol. I**

By John P. Peters, M.D., Professor of Internal Medicine, Yale University School of Medicine, and Donald D. Van Slyke, Ph.D., Member of the Rockefeller Institute for Medical Research. Ed. 2. The Williams & Wilkins Company, Baltimore. 1946. Price, \$7.

This volume covers overall energy changes, and the chemistry and metabolism of the three major foods—carbohydrates, lipids and proteins. It concerns itself with interpretations for which Dr. Peters is responsible. Dr. Van Slyke will discuss methods in volume II. Dr. Peters will continue interpretations covering oxygen, hemoglobin, plasma proteins and inorganic elements.

\* \*

**Conduction Anesthesia: Clinical Studies of  
George P. Pitkin, M.D.**

Edited by James L. Southworth, M.D., and Robert A. Hingston, M.D., assisted by a staff of collaborators. J. B. Lippincott Company, Philadelphia. 1946. Price, \$18.

This book of nearly 1,000 pages is based on a 25 year clinical study of conduction anesthesia. The text is enriched with the large and famous collection of 600 medical illustrations of the late Dr. George P. Pitkin. All phases of the administration of conduction anesthesia are covered. Surgeons and anesthesiologists will welcome this book. The publishers must be complimented on their part of the work. It is excellent.

\* \*

**The Centennial of Surgical Anesthesia**

An annotated catalogue of books and pamphlets bearing on the early history of surgical anesthesia; exhibited at the Yale Medical Library. October, 1946. Compiled by John F. Fulton, M.D., and Madeline E. Stanton, A.B. Henry Schuman, New York. 1946. Price, \$4.

*Textbook of Physiology*

By William D. Zoethout, Ph.D., Professor Emeritus of Physiology, Chicago College of Dental Anatomy, and W. W. Tuttle, Ph.D., Professor of Physiology, College of Medicine, State University of Iowa. Ed. 9. The C. V. Mosby Company, St. Louis. 1946. Price \$4.75.

Revised and brought up to date. A favorite text for many years.

*X-Rays and Radium in the Treatment of Diseases of the Skin*

By George M. McKee, M.D., Professor of Clinical Dermatology and Director of the Department (Skin and Cancer Unit), New York Post-Graduate Medical School and Hospital, and Anthony C. Cipollaro, M.D., Assistant Professor, with a contribution by Hamilton Montgomery, M.D., Associate Professor of Dermatology, Mayo Foundation, University of Minnesota. Ed. 4. Lea & Febiger, Philadelphia. 1946. Price, \$10.

This work correlates the specialized knowledge of the dermatologist and radiologist and includes the essential elements of biology and physics. Considerable attention is also devoted to the historical aspect in order that the young roentgenologist may appreciate the difficulties encountered by the pioneers in this field. This is a conservative text, restricting

itself to the uses of these agents in which the results are sure. It points out the various pitfalls and contraindications. Obsolete material has been eliminated but everything which experience has shown to be of value is included.

*Laboratory Instructions in Biochemistry*

By Israel S. Kleiner, Ph.D., Professor of Biochemistry, New York Medical College, and Louis B. Dotti, Ph.D., Chemist, St. Luke's Hospital. Ed. 2. The C. V. Mosby Company, St. Louis. 1946. Price, \$2.50.

Biochemistry is simplified for the student, hence a copy of this manual will be of great use to him.

*Notes on Nursing:**What It Is and What It Is Not*

By Florence Nightingale. A reproduction of the original (1859) edition by J. B. Lippincott Company, Philadelphia. 1946. Price, \$1.25.

This is the first book on nursing written by the founder of nursing. Its basic discussion of bedside nursing, its sprightly comment, its common sense evaluations, all preserve a distinguished background to nursing.

## HADEN'S Principles of Hematology

With 106 Illustrative Cases

By RUSSELL L. HADEN, M.A., M.D.

Chief of the Medical Division of the Cleveland Clinic, Cleveland, Ohio

New third edition, published 1946. Octavo, 366 pages, with 171 illustrations including 173 original photomicrographs and 95 original charts and drawings. Cloth, \$5.00.

The object of this work is to simplify the study of blood disorders. It presents the fundamental changes in blood disturbances that clarify clinical hematology. In this edition the text has been entirely reset and many additions have been made. Among them the technic of bone marrow puncture and the discussion of films so obtained, a procedure of great value in clinical and laboratory hematology. Technical methods for all the practical procedures are described in detail. The illustrations are excellent. The technic of blood examination, the clinical features of blood dyscrasias, and finally the treatment are all well integrated. The mechanized diagrams are most ingenious. The work is a safe and authoritative guide.

Washington Square **LEA & FEBIGER** Philadelphia 6, Pa.

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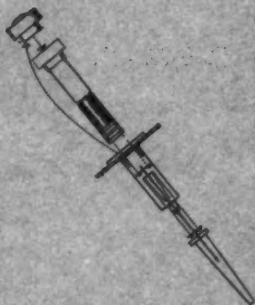
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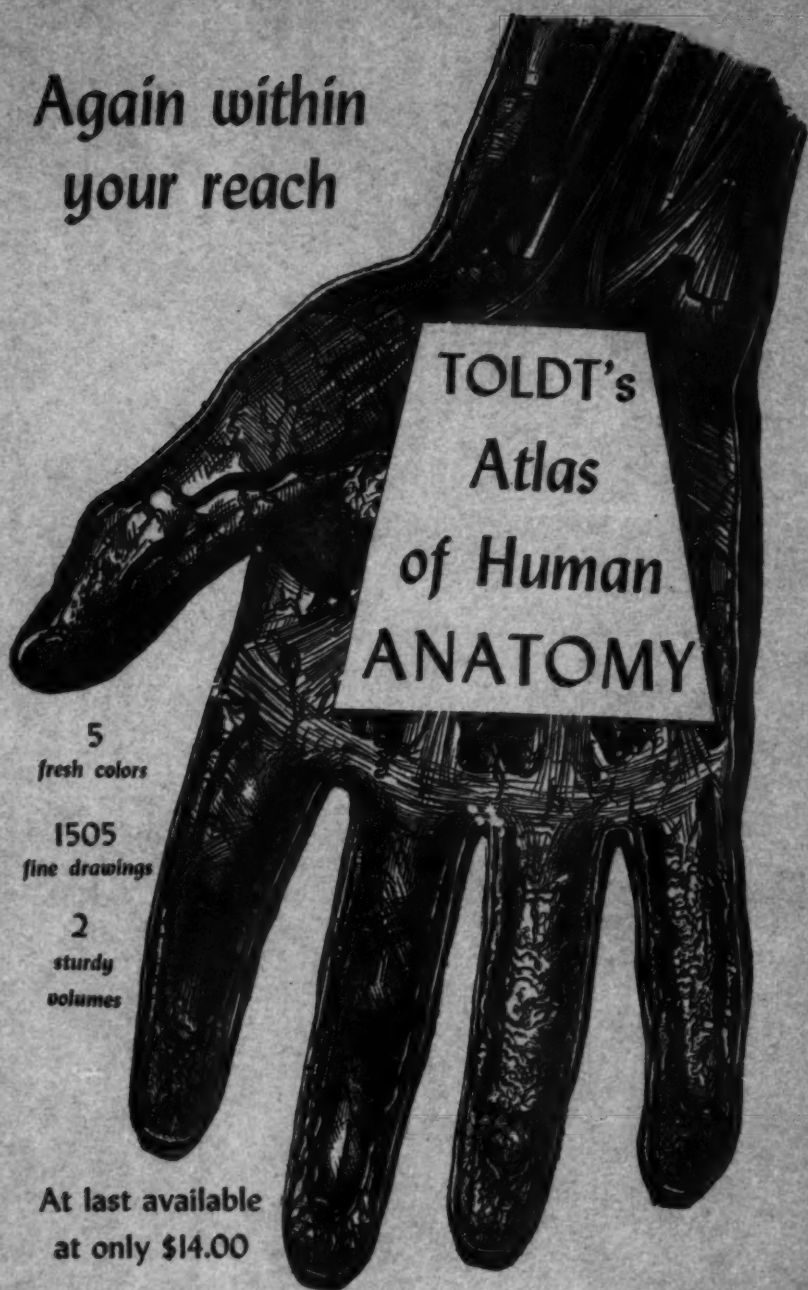


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